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THE VALUE OF MONEY

BY

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B. M. A., III

AND

J. C. A.

WHO OFTEN INTERRUPTED THE WORK

BUT NONE THE LESS INSPIRED IT

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PREFACE

The following pages have as their central problem the value of money. But the value of money cannot be studied successfully as an isolated problem, and in order to reach conclusions upon this topic, it has been necessary to consider virtually the whole range of economic theory; the general theory of value; the rôle of money in economic theory and the functions of money in economic life; the theory of the values of stocks and bonds, of "good will," established trade connections, trade-marks, and other "intangibles"; the theory of credit; the causes governing the volume of trade, and particularly the place of speculation in the volume of trade; the relation of "static" economic theory to "dynamic" economic theory.

"Dynamic economics" is concerned with change and readjustment in economic life. A distinctive doctrine of the present book is that the great bulk of exchanging grows out of dynamic change, and that speculation, in particular, constitutes by far the major part of all trade. From this it follows that the main work of money and credit, as instruments of exchange, is done in the process of dynamic readjustment, and, consequently, that the theory of money and credit *must be a dynamic theory*. It follows, further, that a theory like the "quantity theory of money," which rests in the notions of "static equilibrium" and "normal adjustment," abstracting from the "transitional process of readjustment," touches the real problems of money and credit not at all.

This thesis has seemed to require statistical verification, and the effort has been made to measure the elements in

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trade, to assign proportions for retail trade and for wholesale trade, to obtain *indicia* of the extent and variation of speculation in securities, grain, and other things on the organized exchanges, and to indicate something of the extent of less organized speculation running through the whole of business. The ratio of foreign to domestic trade has been studied, for the years, 1890–1916.

The effort has also been made to determine the magnitudes of banking transactions, and the relation of banking transactions to the volume of trade. The conclusion has been reached that the overwhelming bulk of banking transactions occur in connection with speculation. The effort has been made to interpret bank clearings, both in New York and in the country outside, with a view to determining quantitatively the major factors that give rise to them.

In general, the inductive study would show that modern business and banking centre about the stock market to a much greater degree than most students have recognized. The analysis of banking assets would go to show that the main function of modern bank credit is in the direct or indirect financing of corporate and unincorporated *industry*. "Commercial paper" is no longer the chief banking asset.

It is not concluded from this, however, that commerce in the ordinary sense is being robbed by modern tendencies of its proper banking accommodation, or that the banks are engaged in dangerous practices. On the contrary it is maintained that the ability of the banks to aid ordinary commerce is increased by the intimate connection of the banks with the stock market. The thesis is advanced—though with a recognition of the political difficulties involved—that the Federal Reserve Banks should not be forbidden to rediscount loans on stock exchange collateral, if they are to perform their best services for the country.

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The quantity theory of money is examined in detail, in various formulations, and the conclusion is reached that the quantity theory is utterly invalid.

The theory of value set forth in Chapter I, and presupposed in the positive argument of the book, is that first set forth in an earlier book by the present writer, *Social Value*, published in 1911. That book grew out of earlier studies in the theory of money, in the course of which the writer reached the conclusion that the problem of money could not be solved until an adequate general theory of value should be developed. The present book thus represents investigations which run through a good many years, and to which the major part of the past six years has been given. On the basis of this general theory of value, and a dynamic theory of money and exchange, our positive conclusions regarding the value of money are reached. On the same basis, a psychological theory of credit is developed, in which the laws of credit are assimilated to the general laws of value.

In a final section, the constructive theory of the book is made the basis for a "reconciliation" of "statics" and "dynamics" in economic theory—an effort to bring together the abstract theory of price (*i. e.*, "statics") which has hitherto chiefly busied economists, and the more realistic studies of economic change (*i. e.*, "dynamics") to which a smaller number of economists have given their attention. These two bodies of doctrine have hitherto had little connection, and the science of economics has suffered as a consequence.

This book was not written with the college student primarily in mind. None the less, I incline to the view that the book, with the exception of the chapter on "Marginal Utility," is suitable for use as a text with juniors and seniors in money and banking, if supplemented by some general

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descriptive and historical book on the subject, and that the whole book may very well be used with such students in advanced courses in economic theory. I think that bankers, brokers, and other business men who are interested in the general problems of money, trade, speculation and credit, will find the book of use. Naturally, however, it is my hope that the special student of money and banking, and the special student of economic theory will find the book of interest. The book may interest also certain students of philosophy and sociology, who are concerned with the applications of philosophy and social philosophy to concrete problems.

My obligations to others, running through a good many years, are very great. With Professor E. E. Agger, I talked over very many of the problems here discussed, in the course of two years of close association at Columbia University, and gained very much from his suggestions and criticisms. Professor E. R. A. Seligman has read portions of the manuscript, and given valuable advice. Professor H. J. Davenport has given the first draft an exceedingly careful reading, and his criticisms have been especially helpful. Professor Jesse E. Pope supervised my investigations in the quantity theory of money in 1904–5, in his seminar at the University of Missouri, and gave me invaluable guidance in the general theory of money and credit then. More recently, his intimate first hand knowledge of European and American conditions, both in agricultural credit and in general banking, has been of great service to me. Mr. N. J. Silberling, of the Department of Economics at Harvard University, has been helpful in various ways, particularly by making certain statistical investigations, to which reference will be made in the text, at my request. Various bankers, brokers, and others closely in touch with the subjects here discussed have been more than generous in supply-

ing needed information. Among these may be especially mentioned Mr. Byron W. Holt, of New York, Mr. Osmund Phillips, Editor of the *Annalist* and Financial Editor of the *New York Times*, Messrs. L. H. Parkhurst and W. B. Donham, of the Old Colony Trust Company in Boston, various gentlemen in the offices of Charles Head & Co., and Pearmain and Brooks, in Boston, Mr. B. F. Smith, of the Cambridge Trust Company, Mr. W. H. Aborn, Coffee Broker, New York, Mr. Burton Thompson, Real Estate Broker, New York, Mr. Jas. H. Taylor, Treasurer of the New York Coffee Exchange, Mr. J. C. T. Merrill, Secretary of the Chicago Board of Trade, DeCoppet and Doremus, New York, and Mr. F. I. Kent, Vice President of the Bankers Trust Company, New York. My greatest obligations are to two colleagues at Harvard University. Professor F. W. Taussig has given the manuscript very careful consideration, from the standpoint of style as well as of doctrine, and has discussed many problems with me in detail. Professor O. M. W. Sprague has placed freely at my service his rich store of practical knowledge of virtually every phase of modern money and banking, and has read critically every page of the manuscript. None of these gentlemen, of course, is to be held responsible for my mistakes. I also make grateful acknowledgment of the aid and sympathy of my wife.

In the course of the discussion, frequent criticisms are directed against the doctrines of Professors E. W. Kemmerer and Irving Fisher, particularly the latter, as the chief representatives of the present day formulation of the quantity theory. Both their theories and their statistics are fundamentally criticised. I find myself in radical dissent on all the main theses of Professor Fisher's *Purchasing Power of Money*, and at very many points of detail. To a less degree, I find myself unable to concur with Professor

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Kemmerer. But I should be sorry if the reader should feel that I fail to recognize the distinguished services which both of these writers have performed for the scientific study of money and banking, or should feel that dissent precludes admiration. I acknowledge my own indebtedness to both, not alone for the gain which comes from having an opposing view clearly defined and ably presented, but also for much information and many new ideas. My general doctrinal obligations in the theory of money and credit are far too numerous to mention in a preface. My greatest debt in general economic theory is to Professor J. B. Clark.

B. M. ANDERSON, JR.

HARVARD UNIVERSITY, March 31, 1917.

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PART I. THE VALUE OF MONEY AND THE GENERAL THEORY OF VALUE

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THE VALUE OF MONEY

CHAPTER I

ECONOMIC VALUE

THE problem of the value of money is a special case of the general problem of economic value. The present chapter is concerned with the general theory of value, while the rest of the book will consider the numerous peculiarities and complications which make money a special case. The main proof of the theory here presented is to be found in a previous book[1] by the present writer. A number of periodical articles by several writers which have since appeared, in criticism or in further development of the theory, have at various points led to shifting emphasis and clearer understanding on the author's part, and the present exposition, without seeking explicitly to meet many of these criticisms, or to embody the new developments, will none the less be different because of them. To one writer in particular, Professor C. H. Cooley, the theory is indebted for restatement, amplification, and important additions.[2] On the whole, however, the theory presented in this chapter is sub-

[1] *Social Value*, Houghton Mifflin, Boston, 1911.

[2] Cooley, C. H., "Valuation as a Social Process," *Psych. Bull.*, Dec. 15, 1912; "The Institutional Character of Pecuniary Valuation," *American Journal of Sociology*, Jan. 1913; "The Sphere of Pecuniary Valuation," *Ibid.*, Sept. 1913; "The Progress of Pecuniary Valuation," *Quart. Jour. of Econ.*, Nov. 1915. Clark, J. M., "The Concept of Value," and "A Rejoinder," *Quart. Jour. of Econ.*, Aug. 1915. Anderson, B. M., Jr., "The Concept of Value Further Considered," *Ibid.*; "Schumpeter's Dynamic Economics," *Pol. Sci. Quart.*, Dec. 1915. Perry, R. B., "Economic Value and Moral Value," *Quart. Jour. of Econ.*, May, 1916. Bilgram, Hugo, "The Equivalent Concept of Value," *Ibid.*, Nov. 1915. Haney, L. H., "The

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stantially the theory presented in the earlier book. The theory is set forth in the present chapter with sufficient fullness to make the present volume independent of the earlier book.

Value has long been recognized as the fundamental economic concept. There have been many and divergent definitions of value, and many different theories as to its origin. It is the belief of the present writer—not shared by all his critics!—that the definition of value which follows, and the conception of the function of value in economic theory involved in it, conform to the actual use of the term in the main body of economic literature. The theory of the *causes* of value here advanced is new, but the definition of value, and the conception of the relation of value to wealth, to price, to exchange, and to other economic ideas, seem to the present writer to conform to what is implied, and often expressed, in the general usage of economists.[1]

Social Point of View in Economics," *Ibid.*, Nov. 1913 and Feb. 1914. Johnson, A. S., in *American Economic Review*, June, 1912, pp. 320 *et seq.* Carver, T. N., in *Jour. of Pol. Econ.*, June, 1912. Mead, G. H., in *Psych. Bull.*, Dec. 1911. Ellwood, C. A., in *American Jour. of Sociology*, 1913. Ansiaux, M., in *Archives Sociologiques, Bulletin de l'Institut de Sociologie Solvay*, May 25, 1912, pp. 949–55.

Professor Cooley's articles, which I have listed first in this note, have in certain important particulars shifted the emphasis and changed the method of approach. He is more interested in the general sociological aspects of the value problem than in the technical economic aspects. In considering economic value, he is more interested in its general social functions than in its function as a tool of thought for the economic theorist. He has, therefore, been less bound by schemata than I have in the discussion. This different method of approach, coupled with a singular charm in exposition which characterizes everything Professor Cooley writes, makes it seem probable to me that readers who may find the doctrine as I set it forth unconvincing, will be convinced by Professor Cooley's exposition. I hope, too, that Professor Cooley's articles, which have been scattered among three periodicals, may soon appear together under one cover.

[1] Including many whose formal definitions are quite different, and who would repudiate the contentions here advanced! *Cf.* my article, "The Concept of Value Further Considered," *Quarterly Journal of Economics*, Aug. 1915, and *Social Value*, chs. 2 and 11.

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It is important to separate sharply two questions: one, the theory of the causes of value, and the other, the definition of value, or the question of the formal and logical aspects of the value concept. The two questions cannot be wholly divorced, but clarity is promoted by considering them separately. We shall take up the formal and logical aspects of the matter first.

Value is the common quality of wealth. Wealth in most of its aspects is highly heterogeneous: hay and milk, iron and corn-land, cows and calico, human services and gold watches, dollars and doughnuts, pig-pens and pearls—all these things, diverse though they be in their physical attributes, have one quality in common: Economic Value.[1] By virtue of this common or generic quality, it is possible to add wealth together to get a sum, to compare items of wealth with one another, to see which is greater, to get ratios of exchange between items of wealth, to speak of one item of wealth, say a crop of wheat, as being a percentage of another, say the land which produced it, etc. This common quality, value, is also a *quantity*. It belongs to that class of qualities which can be greater or less, can mount or descend a scale, without ceasing to be the same quality,—like heat or weight or length. Such qualities are *quantities*. There is nothing novel in the statement

[1] Definitions of wealth differ, and there are few if any definitions of wealth broad enough to make it true that only items of wealth have value. All wealth has value, but not all value is embodied in wealth. Thus, stocks and bonds, and "good will" have value. Few writers would classify them as wealth. The distinction between wealth and property is employed by many writers to meet the difficulty here presented, and it is held that these intangibles have only the value of the wealth to which they give title. In a logical schema, on the assumption of a fluid, static equilibrium, this may serve. It is true in fact, however, that many of these intangibles have value apart from the wealth to which they give title. But these are complications which I reserve for a later part of this chapter, for the chapter on "Statics and Dynamics," and (in the case of irredeemable paper money) for the chapter on "Dodo Bones."

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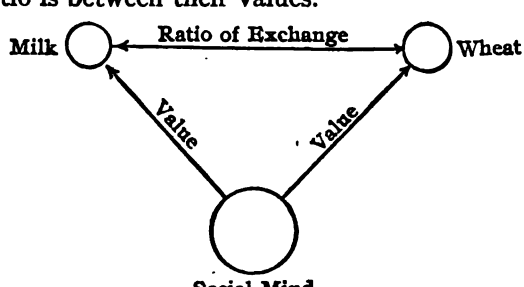
that a quality is also a quantity. It is implied in every day speech. We say that a man is tall, or heavy, or that the room is hot—qualitative statements; or we may say exactly how tall, or how heavy, or how hot—quantitative statements. The distinction between qualitative analysis and quantitative analysis in chemistry implies the same idea. Thus we may speak of a piece of wealth as having a definite quantity of value, or say that the value of the piece of wealth is a definite quantity. We may then work out mathematical relations among the different quantities of value, sums, ratios, percentages, etc.

Ratios of Exchange are ratios between two quantities of value, the values of the units of the two kinds of wealth exchanged.[1] A good many economists, particularly in their chapters on definition, have defined value as a ratio of exchange. This is inaccurate. The ratio of exchange presupposes *two* values, which are the terms of the ratio. The ratio is not between milk and wheat in all their attributes. It is between milk and wheat with respect to one particular attribute. Compare them on the basis of weight, or cubic contents, and you would get ratios quite different from the ratio which actually is the ratio of exchange. The ratio is between their values.



In the diagram above, something of what is to follow is

[1] The notion of ratio of exchange as a ratio between values is strictly accurate only under static assumptions. Goods, in actual life, are not always

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anticipated, since the cause of value is indicated. Wheat is shown to be exerting an influence on milk, and milk exerts an influence on wheat. The comparative strength of these two influences determines the ratio of exchange between them. But these two influences are not ultimate. The ratio of exchange is a relation, a *reciprocal* relation. It works both ways. But behind this relativity, this scheme of relations between values, there lie two values which are absolute. These values rest in the pull exerted on wheat and on milk by the human factor which is fundamental, which in our diagram we have called the "social mind." Values lie behind ratios of exchange, and causally determine them. The important thing for present purposes is merely to note that value is prior to exchange relations, that it is an absolute quantity, and not, as many economists have put it, purely relative. The ratio of exchange is relative, but there must be absolutes behind relations.

A *price* is merely one particular kind of ratio of exchange, namely, a ratio of exchange in which one of the terms is the value of the money unit.[1] In modern life, prices are

exchanged strictly in accordance with their values. *Cf.* my article, "The Concept of Value Further Considered," *Q. J. E.*, Aug. 1915, pp. 698–702. In cases where prices, or exchange relations, are not in accord with values, the term "ratio of exchange" is inapplicable, since there are no quantities to be terms of the ratio—except the pure abstract numbers of the commodities, each measured in its own unit, exchanged.

[1] In chapter 17 of *Social Value*, I have followed the German usage in broadening the term, price, to cover all exchange relations. This has led to misunderstanding on the part of some readers, and it has seemed best to me to return to what appears to be the more familiar usage. It is purely a question of convenience. Practically, ratios of exchange which are not money-prices rarely come in for discussion, outside the preliminary chapter on definition! Professor Fetter, in his article on the "Definition of Price," in the *American Economic Review*, Dec. 1912, proposes to broaden the term price in the manner which I am here abandoning, and his count of economists would seem to leave usage about equally divided between the broader and narrower uses of the term. It does not seem to me to be a point worth arguing about, however, and since I am practically convinced that cause of misunderstanding will be removed by using price to mean "money-price,"

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the chief form of ratio of exchange, but it is important for some purposes to remember that they are not the only form.

Values may simultaneously rise and fall. There may be an increase or decrease in the sum total of values. Ratios of exchange cannot all rise or fall. A rise in the ratio of the value of wheat to the value of milk means a fall in the ratio of the value of milk to the value of wheat. Both may have fallen in absolute value, but both cannot simultaneously rise or fall with reference to one another. This is the truism regarding ratios of exchange which many economists have inaccurately applied to value itself in the doctrine that there cannot be a simultaneous rise or fall of values. There can be a simultaneous rise or fall of values, but not a simultaneous rise or fall of ratios of exchange.

There can be a general rise or fall of prices. Goods in general, other than money, may rise in value, while money remains constant in value. This would mean a rise in prices. Or, money may fall in value while goods in general are stationary in value. This would also mean a rise in prices. In either case, more money would be given for other goods, and the ratio between the value of the money unit and the value of other goods would have altered adversely to money. There are writers to whom the term, value of money, means merely the average of prices (or the reciprocal of the average of prices). For them, a rise in the average of prices is, *ipso facto*, a fall in the value of money. This view will receive repeated attention in later chapters. The view maintained in the present book is that the value of money is a quality of money, that quality which money shares with other forms of wealth, which lies

I shall so use the term in this book, using ratio of exchange, or exchange relation, to express the broader concept.

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behind, and causally explains, the exchange relations into which money enters. Every price implies *two* values, the value of the money-unit and the value of the unit of the good in question.

Value is prior to *exchange*. Value is not to be defined as "power in exchange." Certain writers [1] who see the need of a quantitative value, which can be attributed to goods as a quality, still cling to the notion that value is relative, that two goods must exist before one value can exist, and that value is "power in exchange," or "purchasing power." The power is conceived of as something more than the fact of exchange, and as a cause of the exchange relations, but is, none the less, defined in terms of exchange. This position, however, does not really advance the analysis. It is a verbal solution of difficulties merely. To say that goods command a price because they have power in exchange is like saying that opium puts men to sleep because it has a dormitive power. Physicians now recognize that this is no solution of difficulties, that it is merely a repetition of the problem in other words. If we wish to explain exchange, we must seek the explanation in something anterior to exchange. If value is to be distinguished from ratio of exchange at all, it cannot be defined as "power in exchange."

To seek to confine value to exchange relations, moreover, makes it impossible to speak of the value of such things as the Capitol at Washington City, or the value of an entailed estate, or of values as existing *between* exchanges. Nor can we make the price which a good would command at a given moment the test of its value, except in the case of the highly organized, fluid market. Land, at forced

[1] *E. g.*, Böhm-Bawerk, *Grundzüge der Theorie des wirtschaftlichen Güterwerts*, Conrad's *Jahrbücher*, 1886, p. 478, n.; Carver, "Concept of an Economic Quantity," *Quarterly Journal of Economics*, 1907.

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sale, notoriously often brings prices which do not correctly express its value. Moreover, even for wheat in the grain pit, the exchange test is valid only on the assumption that a comparatively small amount is to be sold. If very much is put on the market, the situation is changed, and the value falls. In other words, if "bulls" cease to be "bulls," and shift to the other side of the market, the very elements which were sustaining the value of the wheat have been weakened, and of course its value falls. "Power in exchange" is a function of two factors, (1) value and (2) saleability. A copper cent has high saleability, with little value, while land has high value with little saleability.[1] Some things have value with no saleability at all. In a socialistic community, where all lands, houses, tools, machines, etc., are owned by the state, and where such "prices" as exist are authoritatively prescribed, value and exchange would have no necessary connection. Values would remain, however, guiding the economic activity of the socialistic community, directing labor now here, now there, determining the employment of lands now in this sort of production, now in that. Exchange is only one of the manifestations of value. More fundamental, and more general, including "power in exchange," but not exhausted by it, is the power which objects of value have over the economic activities of men. This is the fundamental function of values. The entailed estate, which cannot be sold, still has power over the actions of men. The care which is taken of it, the amount of insurance which an insurance company will write on it, etc., are manifestations and measures of its value. The same may be said of the Capitol at Washington.[2]

[1] This distinction is elaborated *infra*, in the chapter on the "Origin of Money."

[2] It is a matter of high importance that the value notion should be extended beyond exchange, if the economist is to be able to apply his theory

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In the fluid market, prices correctly express values. Assuming that the money-unit is fixed in value, variations in prices in the fluid market correctly indicate variations in values. The great bulk of our economic theory, the laws of supply and demand, cost of production, the capitalization theory, etc., do assume the fluid market, and a fixed value of the dollar.[1] Our economic theory is static theory, in general, and abstracts from the time factor and from "friction." In fact, values change first, and then, more or less rapidly, and more or less completely, prices respond. In the active wholesale and speculative markets, where the overwhelming bulk of exchanging takes place, the prices respond quickly. Static theory is thus adequate for the explanation of these prices, for most practical purposes, so long as the changes in prices are due to changing values of goods, rather than to changing value of the money-unit. Moreover, the distinction between value and price is, in a fluid market, where the value of money is changing slowly, often not important. In the assumption of money, and of a fixed value of money, the absolute value concept is already assumed. No harm is done, however, if the economist does not explicitly refer to this, but goes on merely talking about money-prices. Very many economic problems indeed may be solved that way. This is why the inadequate character of the conceptions of value as "ratio of exchange" or "purchasing power" has not prevented these notions from being serviceable tools in the hands of many writers. But there are many problems for which these conceptions are not adequate, because the implicit assumption of a fixed value of money cannot be

to such highly important economic problems as socialism. *Cf.* Schäffle, *Quintessence of Socialism*, and Clark, J. M., *Quart. Jour. of Econ.*, Aug. 1915, p. 710.

[1] As shown, *infra*, in the chapters on "Supply and Demand," "Cost of Production," "Capitalization Theory," etc.

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made. Among these problems is the problem of the value of money itself, which constitutes the subject of this book. For that problem, an absolute value concept is vital.

If, in our diagram above, we substitute for "social mind" the more general expression, "human factor," we should find that our value concept is the common property of many writers. We should find it fitting in with the absolute value notion of Adam Smith and of Ricardo.[1] The "human factor" which *explains* the absolute value is, for them, *labor*. We should find it fitting in with the "socially necessary labor time" of Marx: the value of a bushel of wheat is the amount of labor time which, on the *average*, is required to produce a bushel of wheat. It is an absolute value. It is a causal coefficient with the absolute value, similarly explained, of the bushel of corn, in explaining the wheat-price of corn. Our concept will fit in exactly with the "social use-value" of Carl Knies, according to whom the economic value of a good in society is an *average* of its varying use-values to different individuals in the market. This average is an absolute quantity. The absolute values of units of two goods, thus explained, causally fix the exchange ratio between the goods. Knies' value-theory, it may be noticed, is explicitly modeled on that of Marx, to whom he refers, the difference being that Knies takes an average of individual use-values, while Marx takes an average of individual labor-times, as the causal explanation.[2] Our value concept will fit perfectly with Professor J. B. Clark's "social marginal utility" theory of value. Indeed, the present writer gratefully acknowledges that the concept is Professor Clark's rather than his own, and that all that is necessary for its explanation

[1] *Vide Social Value*, p. 176, n. *Cf.* Davenport, *Value and Distribution*, chapter on "Ricardo."

[2] Knies, *Das Geld*, vol. I of *Geld und Credit*, Berlin, 1873, pp. 113–125, esp. 124.

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has been set forth by Professor Clark.[1] Professor Clark's *causal* theory of value, his explanation of this absolute quantity of value as a *sum* of individual marginal utilities, we have elsewhere [2] criticised as involving circular reasoning, like all marginal utility theories, in so far as they offer causal explanations. But his statement of the logical character of value, of the relation of value to wealth, of value to price, of value to exchange, of the functions of the value concept in economic theory, and of the functions of value in economic life,—Clark's doctrines on these points we have accepted bodily, and in so far as the present writer has added anything to them it has been by way of elaboration and defence.

The concept of value here developed is explicitly adopted by T. S. Adams, David Kinley, W. A. Scott, W. G. L. Taylor, L. S. Merriam, and A. S. Johnson, among American writers, to name no others. All of these writers would concur in the formal and logical considerations [3] as to the nature of value here presented, whatever differences might appear among them as to the causal explanation of value.

The value concept here presented performs the same logical functions as the "inner objective value" of Karl

[1] Chapter on "Value" in the *Philosophy of Wealth*, and ch. 24 of the *Distribution of Wealth*.

[2] *Social Value*, ch. 7.

[3] T. S. Adams, "Index Numbers and the Standard of Value," *Jour. of Pol. Econ.*, vol. x, 1901–02, pp. 11 and 18–19; Kinley, "Money", p. 62; W. G. L. Taylor, "Values, Relative and Positive," *Annals of the Amer. Acad.*, vol. ix; Merriam, L. S., "The Theory of Final Utility in its Relation to Money and the Standard of Deferred Payments," *Annals of the American Acad.*, vol. iii, and "Money as a Measure of Value," *Ibid.*, vol. iv; Scott, W. A., "Money and Banking", 1903 ed., ch. III. Professor Scott, in a letter to the writer, expresses the opinion that a value concept which makes the value of a good a quantity, socially valid, regardless of the particular holder of the coin or commodity in question, and regardless of the particular exchange ratio into which the value quantity enters as a term, "is absolutely essential to the working out of economic problems." Johnson, A. S., "Davenport's Economics and the Present Problems of Theory," *Quarterly Journal of Economics*, May, 1914, and *American Econ. Rev.*, June, 1912, p. 320.

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Menger, Ludwig von Mises, and Karl Helfferich, discussed in our chapter on "Marginal Utility," below, and is, in its formal and logical aspects, to be identified with that notion. It is essentially like Wieser's "public economic value," discussed in the same chapter.[1] That there should remain critics [2] who consider the present writer a daring innovator, who is thrusting a personal idiosyncracy in terminology upon economic theory, is striking evidence that men often talk about books which they have not read! The reader who accepts, provisionally, the doctrine so far presented, as a tool of thought which will aid us in the further progress of the argument, may do so with the full assurance that he is accepting a tried and tested concept, which has seemed necessary to very many indeed of the great masters of the science.[3]

So far, the writer feels himself in accord with the main current of economic thought. When we come to a causal explanation of the value quantity, however, earlier theories appear unsatisfactory. The labor theory of value has long since broken down, and has been generally abandoned. The reasons for this will appear in the chapter on "Cost of Production." The effort to explain value by marginal utility, by the satisfactions which individuals derive from the last increment consumed of a commodity, has likewise

[1] *Cf.* also Wieser's *Natural Value*, p. 53, n. Senior's "intrinsic causes of value" comes to the same thing.

[2] *Cf. Quarterly Journal of Economics*, Aug. 1915, pp. 681–82, esp. 681, n.

[3] Among the leading figures in economics to whom this doctrine is unacceptable, I would mention especially Professor H. J. Davenport, *Value and Distribution* and *The Economics of Enterprise*. A writer who seeks to minimize the importance of the issue between the relative and the absolute conceptions of value is Professor J. M. Clark, in *Quarterly Journal of Economics*, Aug. 1915. Professor Clark seems to agree with much of what has been said here, and the present writer would agree with Professor Clark, as indicated above, that for many purposes we do not need to look behind prices—entering a *caveat* that this is true only so long as we can assume a fixed absolute value of money.

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broken down, as will appear in the chapter on "Marginal Utility." In general, it may be said that the effort to pick out feeling magnitudes,[1] either of pleasure or pain, in the minds of individuals, and combine them into a social quantity, leads to circular reasoning. Thus, the utility theory: It is not alone the intensity of a man's marginal desire for a good which determines his influence on the market. If he has no money, he may desire a thing ever so intensely without giving it value. If he is rich, a slight desire counts for a great deal. In other words, utility, backed by *value*, gives a commodity value. But this is to explain value by value, which is circular. So with the theory of average labor *time*. How shall we average labor time? The problem is easy if we confine ourselves, say, to wheat. If one bushel of wheat is produced with ten hours' labor, a second with eight hours' labor and a third with six hours' labor, the average is eight hours, and we may fix the value of the bushel of wheat according. But suppose we wish to compare the labor engaged in making *hats* with the labor engaged in raising wheat. How can such labor be compared? Hats are, in their physical aspects, incommensurable with wheat. The one quality which they have in common, relevant to the present interest, is *value*. Given the value of the wheat and the value of the hats, you may compare and average out the labor engaged in producing them. But if value must be employed as a means of averaging labor, it is clear that average labor can be no explanation of value. This is not the only flaw in the labor-time theory, but it illustrates a vice which it has in common with all those theories which start with individual elements, and seek to combine them into a social quantity. The whole

[1] The psychology of this statement, which involves hedonism, needs improvement, but the issue need not be discussed here. *Cf. Social Value*, ch. 10.

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method of approach is wrong. It makes two abstractions, neither of which is legitimate: first, it abstracts the individual from his vital and organic connections with his fellows, and then, second, it takes from the individual, thus abstracted, only a small part, that part immediately concerned with the consumption or production of wealth. In this process of abstraction, very much of the explanation of value is left out. The *whole* man, in his *social* relations, must be taken into account before we can get an adequate theory of value. We turn, then, to a brief discussion of society and the individual, and to a discussion of those individual activities and social relations which are most significant in the explanation of economic value.

All mental processes are in the minds of individual men. There is no social "oversoul" which transcends individual minds, and there is no social "consciousness" which stands outside of and above the consciousnesses of individuals. So much by way of emphatic concurrence with those critics of the social value theory [1] who persist in foisting upon the theory the notion that there is a social oversoul, or that the "social organism" is some so far unclassified biological specimen. To say that economic value is a social value, the product of many minds in organic interplay, is not to say that economic value is independent of processes in the minds of individual men, or that it results from any mysterious behavior of a social oversoul.

The human animal is born with certain innate instincts and capacities. Human animals of different races and different strains are in highly important points different in their instincts and capacities. But the human animal is not born with a *human mind*. Nor could the human animal, apart from association with his fellows, ever de-

[1] As Professor R. B. Perry, *Quart. Jour. of Econ.*, May, 1916.

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velop a human mind. "The human mind is what happens to the human animal in a social situation." [1] Of course, without the care of adults, the infant would, in general, promptly perish. But, more fundamental for our purposes, is the fact that all the important stimuli which play upon the child during his first two years, when the human mind is being developed, are social stimuli. So true is this, that the child's commerce with physical things runs in social terms. The child interprets the physical objects about him *personally*, attributes life and human attributes to them, holds conversation with them, praises and blames them, makes companions of them. This *animism* of the child, so puzzling to an old-fashioned psychology, is readily explained by social psychology. It is a social interpretation of the universe. It follows naturally from the principle of apperception: the interpretation of the unknown in terms of the known; the extension of accumulated experience to the interpretation of new experiences. The first experiences of the human animal are social experiences.

In the history of human society, a similar generalization is possible. The human *individual* is found, not in primitive life, but late in the scale of social evolution. Individuality is a social product. The savage is not a free, self-conscious person, who can set himself off against the group, and feel himself an isolated centre of power. His life is wrapped up in the group life. In the great barbarian states like Ancient Egypt or China, the life of the individual was so controlled by social tradition, and innovation was so ruthlessly crushed out that individuality had little scope. Greece and Judea gave larger scope to individual variation, but the individual still felt himself bound up

[1] In this I am following a line of thought developed by Professor John Dewey in a lecture delivered before the Harvard Philosophical Club in 1913–14.

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with his group, and was stoned, given hemlock, or crucified if he challenged the existing social order too seriously. The break-up of the Greek city states, as independent sovereignties, and their subjection to the universal sway of Rome, made it possible for the cultured Greek to set himself up in opposition to the State; the coming of Christianity, substituting personal relations with deity, for the communal worship which had preceded it, gave the individual a vital interest apart from the life of the group about him, so that he could still further feel independent of his immediate social environment. The development by the Roman lawyers of the *Jus Gentium*, the law which is common to all nations as distinguished from the particular law of a given group, emphasized the doctrine of the Christian religion and of the Stoic philosophy of a humanity which transcends the limits of a given state,[1]—a notion which tended to free the individual from dependence on his immediate associates. But note that in all this we have merely a widening and multiplying of social relationships, and that the individual gains freedom from one set of social relationships only by coming into others. The Christian gains freedom from his immediate surroundings because he feels himself in communion with "angels and archangels and all the glorious company of Heaven." Francis Bacon could survive his degradation in the England of his day because he could leave his "name and memory . . . to foreign nations and to the next age."

Bagehot, in his *Physics and Politics*, Tarde, and Baldwin, to name no others,[2] have shown how tremendously responsive human beings are to suggestion, how wide is the

[1] For the elaboration of these ideas, *cf.* Hegel, *Philosophy of History, passim;* Willoughby, *The Nature of the State, passim;* Davidson, T., *History of Education*, New York, 1900, *passim;* Bosanquet, B., *Philosophical Theory of the State;* Royce, J., *The World and the Individual.*

[2] Tarde, *Laws of Imitation;* Baldwin, *Social and Ethical Interpretations.*

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sway of imitation in human life, how fashion, mode, custom, etc., make and mold the individual. Cooley,[1] with an improved psychology, has amplified the analysis, tracing the development of the individual mind in interaction with the minds of those about him, making still clearer the sweep and pervasiveness of social factors in framing the very self of the individual. In what follows, I assume the results of these investigations. They constitute the starting point from which we set out on the quest of a theory of economic value.

So much for the individual. He is a social product. But what of society? Objective, external, constraining and impelling forces, which are not physical, which are seemingly not the products of the will of other individuals with whom the individual holds converse, meet the individual on every hand. There is the Moral Law, sacred and majestic, which stands above him, demanding the sacrifice of many of his impulses and desires. There is the Law, external to him and to his fellows, in seeming, failure to obey which may ruin his life. There is Public Opinion, which presents itself to him as an opaque, impersonal force, before which he must bow, and which he feels quite powerless to change. There are Economic Values ruling in the market place, directing industry in its changing from one sort of production to another, bringing prosperity to one individual and bankruptcy to another, not with the caprice of an individual will, but with the remorseless impersonality of wind and tide. He who conforms to them, who anticipates their mutations, gains great wealth—but no business man dare set his personal values against them. There are great Institutions, Church and State and Courts and Professions and giant Corporations and Political Parties, and multitudinous other less formal or

[1] *Human Nature and the Social Order.*

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smaller institutions, which go on in continuous life, though the men who act within them pass and change. Their Life seems an independent life, and the individual who tries to change their course finds that his efforts mean little indeed, as a rule. There is a realm of Social Objectivity, a realm of organization, activity, purpose and power, not physical in character, not mechanical in nature, which is set in opposition to individual will, purpose, power, and activity. How is the individual related to this objective social world?

Three main types of theory have sought to answer this question. On the one hand, there is a type of theory, doubtless the oldest type, a type which arises easily in a period when social changes are slow, which sees in the objective social world something really separate and distinct from individual life, having a non-human origin, and deriving its power from something other than the human will. On the other hand, there is an extreme individualism, which emphasizes individual separateness, which posits as a *datum* the individuality which we have seen to be a social product, and thinks of the objective social realm as a mere mechanical, mathematical summing up of individual factors, or as a something which individuals have consciously made, by contract or agreement, or what not. Finally, there is a type of theory, to which the present writer would adhere, which finds a false antithesis in the contrast thus sharply made between society and individual, which holds that the individual is not, in his psychological activity, so much set off from the activities of his fellows as the contrast would indicate, but rather shares in the give and take of a larger mental life. This larger mental life is completely accounted for when all the individuals are completely accounted for, but it cannot be accounted for by considering the individuals *separately*. No individual is

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completely, or primarily, accounted for until his *relations* to the rest of the group are analyzed. Thinkers who start out with the individuals separately conceived, and then seek to combine them in some arithmetical way, abstract from those organic social relations which constitute the very heart of the phenomenon we are seeking to explain. The parts are *in* the whole, but the whole is not the *sum* of the parts. The relationships are not arithmetical, additive, mechanical, but are vital and organic. Men's minds *function* together, in an organic unity. [1]

The first two of these types of theory (perhaps because individuals are *physically* sharply marked off from one another, and go on in *biological* functioning in obvious separateness) have falsely accentuated the self-dependence and separateness of individual *minds*. The second type of theory, which has sought to work out the whole thing on the basis of this false conception of the individual, has largely failed to see the objective social realities, or has, with methodological rigor, denied their existence. This second type of thinking has especially characterized a good deal of economic theory, which rests on the philosophy and psychology of David Hume.[2] We will set our doctrine

[1] *Cf.* Ellwood, C. H., *Some Prolegomena to Social Psychology*, Chicago, 1901, and Cooley, C. H., *Social Organization*, New York, 1909. See also *Social Value*, ch. 9.

[2] *Cf. Social Value*, ch. 8. H. J. Davenport is the best modern representative of this extreme individualism in economics. Individualism is nearly dead in modern political, ethical, and sociological theory. Revivals of it appear, however, in W. Fite, *Individualism*, and in a recent article by R. B. Perry, "Economic Value and Moral Value," *Quart. Journal of Economics*, May, 1916. (I have discussed Professor Fite's views in the *Pol. Sci. Quart.* of June, 1912.) Professor Perry would there appear to reduce ethical value to a purely individual phenomenon. But he really brings in a "categorical imperative," not derived from the values of the individual, by the "back door." "Now our general moral law prescribes that an agent shall take account of all the interests which his conduct affects, or shall judge his conduct by its consequences all round." (*Loc. cit.*, p. 481.) Just how this "general moral law" is to be derived from individual values, is not made

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in clearer light if we contrast three parallel types of theory which have appeared with reference to the nature of morality, of law, and of economic value. For each of these phenomena, we have theories which represent all three of the types of social thinking to which we have referred.

In the theory of morals, we have, at one extreme, doctrines like those of Kant and Fichte, according to whom morality is a matter of obligation, independent of the human will, independent of consequences, inherent in the nature of things. Man's mind can find out what the moral law is, but man's mind has nothing to do with the making of the moral law. The same notion is involved in the ideas of "natural rights," "justice though the heavens fall," and the like. The conception is strikingly brought out in the question about which old theologians sometimes debated: is Right right because God enjoins it, or does God enjoin Right because it is Right? Whether or not Right is supreme over God, these old theologians never questioned that Right is supreme over all human wishes and desires, and in no sense an outcome of them. At the other extreme, we have the moral doctrine of the Sophists, for whom each man's *will* was right for him—a doctrine which reappears in every individualistic and anarchistic age. For this doctrine, there are no valid social standards of right and wrong. There is nothing binding on the moral agent but his own will. In between, is the moral doctrine of such thinkers as Friedrich Paulsen, or John Dewey, who represent the reigning type of moral theory to-day. For them, morality is a purely human matter. It grows out of the needs and interests of men. What is good at one time and place is not necessarily good at another time

clear. That the wants of every man should count equally with the wants of the agent is a principle which one would expect from Kant or Fichte, but hardly one which individualism can expect to maintain.

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and place. There are no immutable moral principles, valid throughout the ages. None the less, morality is not a private matter, about which men may do as they please. Morality is the product of an organic society, the product of the interplay of many minds. To a given individual, the moral law is, indeed, an external constraining and impelling force. It is the will of the rest of the group. It may be his own will too, but if it is not, it overrides his personal preference, He, on the other hand, is part of the group which constrains and guides every other individual. There are, in fact, many sets of moral values: on the one hand, the social moral values *par excellence*, which the group will *enforce* in various ways; and then, for each individual, his own moral values, which may correspond qualitatively more or less with the group values, or may antagonize them. But the Moral Law is the will of the group. It is no simple composite of the moral values of individuals. It has its organic interrelations with all phases of social life. Economic changes modify it, legal changes modify it, religious values modify it, all phases of social life are expressed in it.

In legal theory, we find these three types of doctrine also. The first type is clearly indicated in the general attitude of American and English courts, especially toward the common law, though it influences their interpretation of all law. The law is something which the mind of man may find out, but may not make. If a new situation arises, the court "finds" the law—in theory the principle "discovered" by the court was in the common law at the beginning. Of course, we know that the judge invents the rule he makes, to fit a novel case, but the judge himself will not admit it. The theory of the law and the theory of morality have developed in close connection, and the notion of "natural right" is a juristic as well as a moral

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idea. At the other extreme, we have from certain recent students of law the doctrine that "The Law" is a myth, that there is nothing but the particular opinion of a particular judge at a particular time. Individualism cannot go so far in legal theory as to give every individual in society a chance to put his oar in, and have a separate law for himself! The social and institutional character of law is too obvious to permit that. But individualism has gone so far in legal theory as to deny all objectivity to law except in a given decision in a particular case. In between these two extreme views, appear the views of writers like Savigny, or Professor Munroe Smith, for whom the law is a changing product of social psychology, volitional [1] rather than intellectual in character, objective enough to the individual who violates it, or the judge who seeks to pervert it, but none the less not outside the minds and interests of men. In Professor Munroe Smith's phrase, law is "that part of the social order which by virtue of the social will may be supported by physical force." [2] I venture to describe this type of legal theory as the "social value" theory of the law. In the chapter on "The Reconciliation of Statics and Dynamics," *infra*, I have cited certain opinions of Mr. Justice Holmes which apply it, and even bring into it the notions of the marginal analysis.

There are, similarly, three types of economic theory. At the one extreme we have theories of "intrinsic" value, which would place economic value outside the wills of men. The mediæval discussions of "just price" often illustrate this notion. It creeps not infrequently into ju-

[1] I use "volition" here in that wide sense which makes it cover both the motor and the affective phases of mind. Munroe Smith would emphasize the motor aspect, where Savigny stresses feeling and sentiment.

[2] "Jurisprudence," a lecture delivered before the faculty of Columbia University, Feb. 1908, New York, The Columbia University Press, 1909, p. 14.

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dicial opinions,—to which such notions are essentially congenial! The working economist of our own day has found little use for it, but in periods when economic change was slow it suggested itself not unnaturally to men, as an explanation of the seeming impersonality of market phenomena, and as a practical idea for combatting extortion and injustice. Something of the idea is involved in a sentence of Shakspere's: [1]

> "But value dwells not in particular will;
> It holds his estimate and dignity
> As well wherein 'tis precious of itself
> As in the prizer."

At the opposite extreme would be those economists, as Professor Davenport and Jevons, who find no value for a good except in the minds of individual men, so that there may be as many different values as there are different men. That something social and objective exists in the market place can hardly be denied, but when pressed for an account of it, these writers reduce it to a bare, abstract, mathematical ratio.[2] Each individual mind is shut up within its own limits, inscrutable to other minds, and there can be no psychological phenomena which include activities in many minds, for this view. In between these two extremes, is the social value theory of the present writer. Economic value is not intrinsic in goods, independent of the minds of men. But it is a fact which is in large degree independent of the mind of any given man. To a given individual in the market, the economic value of a good

[1] I ran across this in Wagner's *Grundlegung*. Wagner had found it in Raul It is from *Troilus and Cressida*, Act II, Scene II.

[2] Davenport, *Value and Distribution*, pp. 184, n., and 330–31, n.; Jevons, *Theory of Political Economy*, pp. 14, 78–84, esp. 83. *Cf. Social Value*, ch. 4. This seems to be the position of Professor R. B. Perry, also, though he is not so extreme as Davenport. *Loc. cit.*

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is a fact as external, as objective, as opaque and stubborn, as is the weight of the object, or the law against murder. There are individual values, marginal utilities, of goods which may differ in magnitude and in quality from man to man, but there is, over and above these, influenced by them in part, influencing them much more than they influence it, a social value for each commodity, a product of a complex social psychology, which includes the individual values, but includes very much more as well. Our theory puts law, moral values, and economic values in the same general class, *species* of the *genus*, social value, alike in their psychological "stuff" and character, to be explained by the same general principles, even though differentiated in their functions, and in the extent to which they depend on various factors in the social situation. They are parts of a social system of motivation and control. They are the *social forces*, which govern, in a social scheme, the actions of men.

It may be well to suggest rough *differentiæ* which mark off these values from one another. Legal values are social values which will be enforced, if need be, by the organized *physical* force of the group, through the government. Moral values are social values which the group enforces by approbation and disapprobation, by cold shoulders and ostracism or by honor and praise. Economic values are values which the group enforces under a system of free enterprise, by means of profits and losses, by riches or bankruptcy. The group may, under a communistic or socialistic system, rely in whole or in part upon the machinery of the law; in which case economic values appear not in their own form as immediately guiding production, but as "presuppositions" of some of the legal values.

The differentiation of these types of social value may

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also run in terms of their *functions*,[1] though it is not so easy to mark them off here, since their functions overlap. The function of economic values is to guide and control the economic activities of men, to send labor from one industry to another, to cause one sort of thing to be produced or another, to supply the motive force which *impels* industry. Legal and moral values also directly affect industry, often working to check the results which the economic values alone would lead to—as when the law forbids the production and sale of liquor, or checks child labor, etc. The law, on the other hand, does not, primarily, in its influence on industry, seek *positively* to determine its direction. The law forbids the production of liquor, but does not decree the production of bread. The law may seek to affect industry positively, by protective tariffs, for example, which aim at the building up of certain industries, but its effects are here indirect, reached through modifications in the economic values. Economic values, on the other hand, do not primarily aim at the regulation of the conduct of men outside the market place, or the shop or the farm, etc. Economic values are not primarily concerned with making men be good husbands or good neighbors, or brave soldiers. Economic values may be used, in part, for these purposes, as when a father-in-law uses his wealth as a lever to make his son-in-law behave—or, indeed, as a bait to get a son-in-law! It is hard to find a phase of social life which is not touched by all types of social values, but it is possible, roughly, to mark off those phases of social life which are subject to primary regulation by one or the other sort of social value.

The differentiation is easier when we look at the social *institutions* which have to do primarily with the one or the

[1] This term carries no connotation of teleology, as here used. I am merely trying to state what the different kinds of value *do*, as a matter of fact.

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other sort of value. Courts and legislatures are easily marked off from stock exchanges and banking houses. There is not so clearly an institutional nucleus for moral values, since the church has lost its control over the moral situation.

When we view the matter from the standpoint of the *objects* of value, *differentiæ* also appear. The main type of object of moral value is modes of conduct; the "type object" of economic value is physical things which men eat, wear, drink, etc., even though *quantitatively* the major part of the sum total of economic values attach to other things, instrumental goods, lands, labor, and social relations, like franchise rights, good will, which in the main reflect the values of consumers' goods;[1] objects of legal value are in large degree the same as objects of moral value, namely, modes of conduct, but moral values attach to a wider group of objects, and legal values attach to certain forms of conduct which are morally indifferent.

It is not so easy to make the differentiation when we view the thing from the standpoint of the consciousness of men who are at the centre of the situation, to whose consciousness the social values are presented. We may put at the very forefront of the economic value of oranges the gustatory feelings or desires of those who consume them; at the forefront of the moral value of a heroic rescue by a fireman the thrill that runs through the onlookers. Qualitatively, these psychological states are different, as those who have experienced both will know. But it is difficult indeed to put the difference into words. When it comes to a legal value, say the legal value of a given contract right which a man seeks to enforce in court, it is not

[1] The *extent* to which the values of consumption goods and services are reflected in other economic values will receive attention below, in the present chapter.

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easy to find any particular emotion or state of consciousness which is peculiar or appropriate to it. The value is so highly institutionalized and impersonal, that it seems to the court and lawyers and even the litigants to be merely a question of fact to be intellectually analyzed. Its roots are deep in human emotions, but not in the emotions, primarily, of those who are handling the transaction. Perhaps the jurist has states of consciousness we know not of. There may be a distinctively legal emotion. It seems to crop out at times when one questions, in conversation with a judge or lawyer, the infallibility of the courts. But the law does not derive its power therefrom! Rather, the law derives its power from the general consent and acquiescence and support of the mass of men, who turn over to experts the details of administering it, and who support The Law in general, rather than the rule of the *corpus delicti*, with their emotional sanction.

I think that we have here a clue to a vital point for our theory. We need not expect to find the major part of the explanation of any of these social values in the conscious emotions of those who are moved by them. In the case of the orange or the heroic act, we are, indeed, close to pretty simple human feelings and desires. In general, in the case of moral values, the individual emotion and the social value are *qualitatively* comparable, since moral values rarely take on a highly institutional character. They are more free from class or institutional control than other social values. This need not be true. Thus, the plantation negro need not feel any personal shame in the moral delinquency which he none the less hides from the "white folks" whose values he must more or less conform to. But, on the whole, moral values are much more "participation values," [1] shared by the whole group in common,

[1] *Cf. Social Value*, p. 125, and Urban, *Valuation*, *passim*. Urban's idea

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than are economic values or legal values. When we pass beyond the simple case of a consumption good, and get into the realm of the more institutional economic values, we lose all guidance from the clue of satisfactions in consumption. Just what emotion, for example, is appropriate in the presence of the four and a half per cent convertible bond of the Chesapeake and Ohio Railway Co.? If it be answered that ultimately that bond represents satisfactions in consumption, since the owner of it may spend the income for consumers' goods, or since the railroad in question carries coal which goes to Italy to be used in a cruiser which will sink an Austrian warship, thereby giving consumers' satisfactions to individuals in Italy, so that the value of the bond is ultimately reducible to specific satisfactions of given individuals, we may still hold that those satisfactions do not constitute the value of the bond, as such. Moreover, the same is true of the legal values. Ultimately, very specific human emotions are affected by the rule of the *corpus delicti*, or the rule governing pleas in *estoppel*. Both in legal and in economic values we have an elaborate and complex system of social psychological character, which can by no means be reduced to elementary desires or feelings of individuals, even though when the whole story is told, no part of the system will be found outside the minds of individual men. The point has been well put by Professor C. H. Cooley: "It would be as reasonable to attempt to explain the theology of St. Thomas Aquinas, or the *Institutes* of Calvin, by the immediate working of religious instinct as to explain the market values of the present time by the immediate work-

of "participation values" is better expressed by Cooley's phrase, "human nature values," while Cooley's excellent phrase, "institutional values" characterizes the more complex values in which classes and institutions are specially *weighted*. *Cf.* Cooley's articles referred to above, and *Social Value*, chs. 11–15, inclusive.

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ing of natural wants." [1] I think that any attempt to differentiate the various kinds of social value on the basis of the type of emotion in the minds of those who have most immediately to do with them, or to explain them primarily by those emotions, is foredoomed. The law does not get its power from the emotion of the judge who gives a decision, nor does the value of a rare painting rest chiefly in the intensity of desire of the few rich connoisseurs who compete for it. Back of the judge, giving *validity* to his decision, stands the will of the group; back of the rich connoisseurs stand the legal and other social values concerned with the distribution of wealth, by virtue of which they are able to make their wants felt in the market. Both judge and connoisseur are focal points, through which stream the social forces affecting the values in question. Both are important. But the emotions and ideas of neither exhaust the psychological causation involved in the values.

This is very much more apparent when we consider the values that arise in the great speculative markets, say in the wheat pit, or the stock exchange. Those who buy and sell are primarily interpreters, students, of impersonal, social forces, seeking to adjust themselves to them, to forecast them, in such a way as to derive profit from them. Their choices and decisions are also factors. Indeed, it is possible to view the matter in such a way as to make their decisions the whole story. In the same way, it is possible to make the mind of the judge the final explanation of the legal value. But the speculators themselves are under no such illusion. They know very well that if they run counter to the facts they will lose money. And the judge knows very well that the range of arbitrary choice which he can exercise without impeachment, or at least without reversal by a

[1] "The Institutional Character of Pecuniary Valuation," *American Journal of Sociology*, Jan. 1913, p. 546.

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higher court, is very limited. Nor is even a Supreme Court of the United States free to do its arbitrary will. Just because it is so conspicuous, and because its doings are so important, it has manifested more respect for judicial tradition, and more responsiveness to the tides of public sentiment, than any other court in the Federal Judiciary.[1]

The head of a great banking house makes a decision regarding an underwriting operation. On his decision depends the question of whether or not the securities are issued. On the issue of the new securities depends, in part, the values of the existing securities of the corporation in question, and the nature of the future employment of thousands of men and great quantities of land and capital. Tremendous power is concentrated in the hands of this banker. But it is not *his* power! He cannot exercise it in an arbitrary or capricious way. He approaches his problem in much the same spirit that the judge approaches a disputed question of law. He analyzes the factors involved. He considers the condition of the money-market, the question of the probable ease or difficulty of marketing the new securities to investors, the prospects of the business of the corporation in question, the probable future demand for its products, the stability of that demand, the personnel of the management of the corporation, the attitude of the government toward it, the nature of its other outstanding securities, with special reference to the proportion of bonds to stocks, and the amount of "fixed charges" against its earnings. He may also take into account other enterprises of similar character which he has connections with, and the question of whether or not building up the corporation in question may injure other corporations to which he has responsibilities. He looks far into the future, seeking to

[1] This, unfortunately, is not high praise, as the Federal Judiciary in general sets a lamentably low standard in these matters.

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conserve his prestige, and unwilling to assume responsibility for an issue which investors will later lose faith in. Proximately, his decision is tremendously important, and his thoughts and feelings are of immense significance, but ultimately, *they* are determined by all manner of social considerations, and *always, the degree to which they count* in determining values depends on his *weight* in the economic situation, which rests (1) on his *prestige, i. e.*, the massing of beliefs and hopes of many men, (2) on his *wealth*, which rests in the legal and moral values governing distribution, and (3) on his institutional relationships, which again are psychological facts, partly legal in character. He is as much a social instrument as is the judge. Both may abuse their power. Both do at times abuse their power. But the significant point is that the power both have is social power, and is in no sense proportional to the intensity of their own emotions. It arises from the emotional power in the minds of many men.

It would be easy to elaborate the points in which morals, laws, and economic values are alike, and to show in detail that the theory of economic value is merely a special case of the general theory of social value. For our present purposes, however, it is enough to have illustrated the general doctrine, and to have set up the economic values as true social forces. It may be noticed that the effort to differentiate the different kinds of value is not altogether successful. They are not in watertight compartments in social life. It is a commonplace among students of ethics that moral values grow, in greater or less degree, out of economic factors. Indeed, the "economic interpretation of history" has as its central theme the doctrine that morality, law, and ideal values in general are governed by the economic situation. This is a one-sided view. Moral and legal values are influenced and modified by economic forces.

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Legal and moral values do, in part, derive their power from economic values. But on the other hand, economic values likewise derive part of their power from legal and moral values. The "social mind" is an organic whole, in which no factors exist "pure," and in which there is constant give and take. The effort to explain moral values by a single principle, as sympathy, legal values by another simple principle, as fear, and economic values by a different simple principle, as utility, is foredoomed. It has been given up by the students of law and morals, and should be abandoned by the students of economics.

Let us consider more narrowly the main factors affecting and explaining economic social values. Let us take, first, the simplest case, that of goods and services which minister directly to human wants, goods and services "of the first order." Goods of this sort would be oranges, bread, clothing, jewels. Services of this sort would be the services of the barber, the valet, the physician, the preacher, the teacher, the actor. I abstract, in discussing these values, from the complications that grow out of the friction in retail trade, and the existence of many customary prices, and prices fixed by other than economic values, in the case of teachers, or preachers. I shall concentrate attention upon such things as oranges, bread, clothing, and jewels. The *focus* of the values of these things, and an essential condition of their existence, is their utility, that is to say, their power to satisfy human wants. Utility as used in economics does not mean usefulness in any moral sense. From the standpoint of the economist, whiskey and opium are as useful as bread, if they satisfy wants equally intense. And the economist is not concerned with the general utility of things considered in their totality. Air is more useful than jewels, but a carat of air is not as useful as a one-carat diamond. Air exists in such abundance that it does not

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need to be economized. Scarcity with reference to the extent of the wants involved is also essential to economic value. A combination of the ideas of utility and scarcity gives us the simple notion for which the formidable name of "marginal utility" has been devised. The marginal utility of a good to a man is the power the last, or "marginal," unit of the good which the man consumes has to give him satisfaction, or, viewed from the standpoint of the man, is the intensity of his desire [1] for, or of his satisfaction in, the final unit consumed. So far, our account of the value of the orange will seem perfectly acceptable to those accustomed to traditional discussions of the problem in the text-books. The difference is that many text-books stop at this point, leaving the impression that with the definition of marginal utility the whole value problem has been solved. For the social value theory, the conception of marginal utility is barely a starting point. Indeed, it is not even a starting point. We shall have to look both in front of it and *behind it*. Recognizing that marginal utilities to individuals are essential to economic values of consumption goods, we shall have to point out other things which are also essential, and we shall have to explain the factors determining these marginal utilities themselves.

The last point may be considered first. Men's desires are socially determined. Even the simplest, most instinctive, wants of human nature are, in their concrete manifestations, the product of social culture in overwhelming degree. Consider sex and hunger. We do not enjoy our food when our neighbors pick their teeth with their forks. This would not trouble a chimpanzee, whose *instinctive* equipment in the matter of hunger is vastly more like that

[1] Neither "desire" nor "satisfaction" is really accurate here, but I do not wish to digress for a discussion of the psychology of value in the individual mind. The present argument can be developed without it. The matter is discussed in detail in ch. 10 of *Social Value*.

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of a man than is the *actual* hunger impulse of a highly civilized man like that of a savage. Civilized men will often starve rather than eat human flesh. Even when moral scruples are overcome, actual physical revulsion may prevent it. Men of different times and places wish food of special sorts, served in special ways. They wish to eat in the company of their fellows, but only of those fellows who can know and obey the ritual that is appropriate to the time and place. This is true of humble folk as of those who "dress for dinner." The ritual differs for the two sorts of people. But there is a spirit, a type of conversation, a code of etiquette, which prevails at the mealtime of virtually all men, and too serious digressions therefrom will take away the appetites of all. About the mealtime and the festal board have gathered a great host of traditions, ideals, and social activities, till they have become in verity an institution, and not the least important, by any means, of social institutions. Out of the simple instinct of sex, we have evolved many of the most precious things of our civilization, and between the sex impulse of the animal and the sex impulse of the gentleman who is seeking to marry the one woman in all the world, there is a difference so great that comparison between the two is difficult.

Here we have wants which grow out of the most elementary things in human nature, wants which are intense and universal, but which vary, in their concrete manifestations, enormously from age to age and from place to place. When we come to the wants which change more quickly, the fact that social factors dominate needs no arguing. Fashion, mode, custom, obviously account for the concrete wants that exist in clothing, ornamentation, amusement, housing, etc. If we wish to know what women will be wanting to wear six months hence, we do not go to women

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individually and ask them. We could not find out that way. They would not know. We go rather to the theatre, and study the stage and the boxes, to the famous designers of women's dress, to the metropolitan centres of various sorts, to the "radiant points of social control" [1] from which emanate the suggestions which pass in imitative waves through the women of the country in the next few months. The laws of imitation have been elaborately developed by Bagehot, Tarde, Baldwin, Ross, LeBon, Cooley, and others, and I content myself here with referring to their writings. The wants of women—and men—are socially given, grow out of a give and take, a social process. And in this social process, it is not true that each man counts one! Rather, a few lead, and many follow. There are centres of prestige which count overwhelmingly.

Certain wants are competitive.[2] Where social status depends on having as good a house as one's neighbors, and where social leadership depends on having a better house than one's neighbors, there is no limit to men's desires for better houses. With each improvement which one introduces, each feels the desire to improve, however contented he might have been had the other not made the improvement. To this we shall recur in our discussion of the origin of money, in explaining the value of gold.

So much for the human wants which stand as the focus of economic values in the case of articles of immediate consumption.

But, given these wants, and given their marginal intensities, we are only at the beginning of our explanation of the economic values of the consumption goods. It is

[1] Ross, E. A., *Social Psychology, passim.*

[2] *Cf.* Veblen, T. B., *Theory of the Leisure Class,* and Carlile, W. W., *Evolution of Modern Money.*

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again not a case of each want counting one, to the extent of its intensity. There are again, by virtue of the legal and moral values governing the distribution of wealth, *centres* of power. The wants of some men count for nothing, however intense they may be. The pauper, the prisoner, the beggar—popular proverb about "beggars and horses" understands them, however much the "marginal utilitarian" may forget that their wants count for nothing.[1] The slightest whim, on the other hand, of the man who has inherited millions may count heavily in giving values to goods. For the explanation of the values of consumption goods, then, we need both the socially determined marginal utilities of individuals, and the socially determined *weight* which these individuals have in our economic system. This *weight* would involve a very elaborate explanation. Many factors affect it. We call attention here, however, especially to the fact that it rests in large part on the legal and moral values and institutions concerned with the distribution of wealth. Changes in the distribution of wealth are as important as changes in the wants themselves in giving the explanation of changes in values. The economic social values of consumption goods include not merely the values of those goods *to* the individuals who consume them, but also the values *of* the individuals themselves in the social scheme of things.

What of the values of instrumental goods, of goods of "higher orders," of labor, of stocks and bonds, of lands, of franchise rights and good will?

It is the one great contribution of the Austrian economists to have shown that the causation in value runs, primarily, from consumption goods to the goods of higher "orders" which are concerned with their production, and that these values of instrumental goods, etc., are derived

[1] *Social Value*, chs. 3–7, esp. ch. 5.

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and secondary values. The value of wheat is based on the value of bread, the value of land on the value of wheat. The value of the stock of United States Steel rests in part on the value of iron lands, which rests on the value of ore, which rests on the value of pig iron, which rests on the value of steel rails, which rests on the value of the service of transporting building materials, which rests on the value of a building, which rests on the value of the services which a dentist performs in an office in the building. This is the main line of causation. This is the first approximation which gives us a clue, without which we should find problems insoluble. But is it not clear that this cannot be the whole story? At every step complications enter. The whole thing cannot be got out of the value of the dentist's services, and the other consumers' goods and services, which are indirectly aided by the property to which title is given by ownership of U. S. Steel stock; nor is the value of the stock to be fully explained by the value of the property to which it gives title.

At every step, we meet the complication that men must estimate and calculate, for one thing. And rarely indeed can men see all the steps, the end from the beginning. Take first a very simple case, wheat land. The value of the wheat land of to-day rests on the value of wheat, but it is the wheat of to-morrow and for many years to come; the wheat of to-morrow rests for its value on the value of the bread of the day after to-morrow. Sometimes the differential between goods at two consecutive steps in the productive process is pretty constant. Wheat and flour vary pretty closely together. The differential is not strictly fixed even there. But bread and wheat land have a much looser connection in their variations. If land could produce no wheat or corn or other good that would satisfy human wants, and if it could not itself satisfy human wants, it would ordinarily

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have no value.[1] But the connection between the value of the bread and the value of the land is loose and uncertain, while the connection between the value of the land and the intensity of the wants actually satisfied by the bread produced from it, is absolutely *nil*. Whether the bread saves a starving man or feeds the pet pigeons of a millionaire, is a matter of indifference so far as the value of the land (or of the bread) is concerned.

We take the values of consumption goods, and break them up, attributing part to the labor that immediately produced them, part to the raw materials that entered into them, part to the machine that fashioned them, and so on. We then break up the value attributed to the raw material, attributing part to the labor that worked in producing it immediately, part to the machine that fashioned it, part to the rawer material of which it was made. And so with the values of the machines. Ultimately we get back to the values of labor, or of land, or of securities giving title to complexes of lands, machines, etc.—values which we do not further break up. But at every step, we find additional factors. We find these derived values becoming independent, substantial, standing in their own right. Moral and legal values affect them directly, as in the case of patriotic support of government securities, moral antagonism to the securities of the Distillers' Securities Corporation, or the influence of court decisions, legislation and elections on security values. Such values rest, in large degree, on the massing of *beliefs* and hopes, not concerned with specific satisfactions of wants, but with the existence of *future* economic values. These beliefs and hopes again have their social explanation. It is not a case where each man counts

[1] But land does often have value which it is impossible to explain on the basis of any income which may reasonably be expected from it, even in the remote future.

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one. There are centres of prestige and power, bankers and financial magnates, whose opinions and decisions count heavily, and waves of optimism and pessimism, which affect the whole group. We shall discuss these matters more fully in connection with the analysis of credit, at a later point of our study. For the present, it is enough to point out that the whole thing cannot be explained on the basis of the values of consumers' goods, and that the values of consumers' goods are only in small part explained by the intensities of the wants they serve.

In summary: Economic value is the common quality of wealth, by virtue of which it is possible to compare divers kinds of wealth, and treat wealth quantitatively, getting ratios of exchange, sums of wealth, etc. Value is a quantity, *i. e.*, a quality which has degrees of intensity. Ratios of exchange are ratios between values. Price is a particular sort of ratio of exchange, namely, a ratio in which one of the terms is the value of the money-unit. Prices correctly express values on the assumption of the fluid market, and on the assumption that the value of the money-unit does not vary.

The value quality is psychological in character. It rests in human minds. But not in the minds of individuals thought of separately. It is a complex of many individual mental activities, highly institutionalized, and including legal and moral values, hopes and beliefs and expectations, as well as the immediate intensities of men's wants for consumption goods.

The ultimate test of scientific theory must be practice. If a theory aids in manipulating facts, if it leads to the discovery of ways of doing things which are better than old ways, if it solves problems which have hitherto remained unsolved, or carries the solution of problems farther than has hitherto been the case, it is a good theory. It need not

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be the best possible theory. It need not be a final theory. The chief claim for the present theory of value is that it not only unlocks all the doors that earlier theories have unlocked, but also others which have resisted the old keys. The man who goes into the modern stock market armed with marginal utility and the quantity theory is like the man who would fight Hindenburg with bows and arrows. Bows and arrows are effective in the hands of expert archers, and the great figures in the history of economics have done wonderful things with marginal utility, "real costs," and the quantity theory. But the social value theory is offered as a better weapon.

The writer believes that the problem of the value of money has not been solved by the older theories of value. He believes that the social value theory will solve it. He proposes on the basis of the social value theory to make clearer the nature of credit phenomena, and to assimilate the laws of credit to the general laws of value. He proposes with the social value theory to bring together in a higher synthesis two divergent types of economic theory, the "static" and the "dynamic." He thinks that a rigorous and consistent application of the absolute concept of value will clarify confusions at various points in the general body of price theory, as the laws of supply and demand, etc.

He offers the social value theory as the only way of giving a *psychological* explanation to the demand-curve, and a marginal *value* explanation of marginal demand-*price*. Demand-curves *are* social value curves, on the assumption of the fixed social value of the dollar. The utility theory, as will appear in the chapter on "Marginal Utility," has failed to give psychological magnitudes corresponding to *any* point on the demand-curve. In general, he offers the social value notion as the justification for the assumption

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of a quantitative value which, as we shall see, underlies the whole of our current price analysis.

The theory here outlined has been, as stated, developed and defended more fully in a previous book. For the rest, the author would have it judged by its usefulness or failure as a tool of thought in the investigations which follow.

NOTE. It has seemed best not to break the main course of the argument of this chapter for the elaboration of one point on which there has appeared to some critics to be vagueness in the exposition of the social value theory in my earlier volume, namely, the relation of social values to the individual values of those who are moved by the social values. Social values have as their function the guidance and control of the activities of men. But men are also moved by their own individual feelings, interests, and desires.

What is the relation between these two sets of factors? In what has gone before, it has been made clear that social values present themselves to the individual as opaque, objective facts, largely beyond his control, to which he must adjust himself. They represent the minds of other men, acting in corporate and organic ways, putting pressure on him, or offering him lures. Now the individual reckons with these social values in the same way that he reckons with any other of the facts affecting the economy of his life. He must adjust himself to them in the same way that he must, if he is a blacksmith, adjust himself to the technical qualities of the iron he is manipulating. This does not mean that he is passive before them, any more than he is passive before the iron. He rather seeks to carry out his personal purposes and desires by actively adapting himself to objective facts, whatever they be. This means that different individuals will react in different ways to the same social value. The fear of the law will keep one man from burning dead leaves in the street where it will not keep another man from murder. A given degree of social pressure will make one man crease his trousers, while another man will not even know that the pressure to crease one's trousers exists! There are great individual variations in responsiveness and sensitiveness to social pressure. In part, these variations are due to inborn qualities. In larger part, they are due to social education, and to social status. Thus, the fact that one man will work all day in a ditch in response to the lure of a dollar and a half, while another

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will not work in the ditch for a hundred dollars a day, may rest in slight degree on the greater inborn sensitiveness of the latter to the physical pain of labor, but rests primarily on the fact that the latter doesn't need the money, and has a social standard, growing out of his class-associations and education, which would make him ashamed to be seen in the ditch. Indeed, we may think of the social standard in question as a social value acting *on* him, rather than *in* him. He fears ridicule. The same degree of social power, luring men toward the ditch, exists in the dollar in each case, but the response is very different in the two cases.

Later formulations of the utility theory and the labor cost theory, as represented by the theory of Schumpeter, which we shall discuss in the chapter on "Marginal Utility," give us, in a scheme of purely static equilibrium, a picture of the adjustment of the individual values to the social values. As we shall see, they give us no account whatever of the social values. They do not explain causation at all. But they do show that there is a tendency for the individual marginal utilities of consumption to become proportional to the social values of the goods consumed by each individual; and for the individual marginal disutilities in production to become proportional to the social values of the rewards that come to producers. The scheme is highly unrealistic. It has been emphatically repudiated by Böhm-Bawerk, so far as the disutility equilibrium is concerned. ("Ultimate Standard of Value," *Annals of the American Academy*, Vol. V, pp. 149–209.) But it is worth something, not as explaining social values or market prices, but rather, as showing how individuals *conform* to social values and market prices. *Cf. Social Value*, pp. 43–44, n. 2, and 148.

The theory that individual marginal utilities and disutilities are proportional to market values is unrealistic enough, in the light of the analysis of individual utilities which we have given, even for the utilities. It is quite impossible to make anything of importance of it from the side of individual disutilities. The length of the working day is not fixed for each worker by a comparison of his own labor pain with the satisfactions he expects from his wages. It is fixed by conditions largely external to him, and the whole group works the same number of hours, with the machine. The law may limit the working day. Trades-union effort may do it. Opportunities for alternative employment may do it, for the labor force of a factory as a whole. But the theory, which really must rest in the notion that

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each individual has many options, and that the working period is flexible, cannot mean much. The prosperity of the laborer does more to limit the working day than does his suffering!

The reactions of individuals as consumers or producers on the social values modify the social values. But, as we have shown, the primary explanation of the social values is not to be found in the individual utilities and disutilities of those who react to them. Utilities and labor pains are parts, but minor parts, in the explanation of social values.

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CHAPTER II

SUPPLY AND DEMAND, AND THE VALUE OF MONEY

THE theory of the value of money is a special case of the general theory of economic value. To the layman, this would seem to go without saying. To the student of the literature of the subject, however, who has noticed the wide divergence between the method of approach to the general problem of value and the method of approach to the problem of the value of money, in most treatises which include both these topics, the proposition will sound unusual if not heretical. Most text-books in English to-day will offer the marginal utility theory as the general theory of value. The same books commonly present the quantity theory of the value of money. Whether or not the two theories are consistent may wait for later discussion, but that the quantity theory of money is a *deduction from* the utility theory of value, and a *special case* of the utility theory of value, will not, I believe, be contended by anyone. Certainly in its origin, the quantity theory is much the older theory. The same is true for those writers who seek to explain value in general on the basis of cost of production, and who at the same time offer the quantity theory to explain the value of money. The two theories may or may not be consistent, but in any case, they are logically and historically independent, neither being a deduction from the other. Older writers (as Walker and Mill), whose treatment of the general theory of value runs in terms of "supply and demand," have stated that the quantity theory is merely a special case of the law of supply and demand, and the statement is

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occasionally met in present-day writings, though one of the most recent and best known of the expositions of the quantity theory, Professor Fisher's *Purchasing Power of Money*, very explicitly repudiates this doctrine.[1] But it may be easily shown, and will be shown later, that the quantity theory, and the present-day formulation of the law of supply and demand, are in no way logically dependent upon each other. This lack of connection between two bodies of doctrine which should be in a most intimate and essential way related to each other, may well throw suspicion on the current treatments of both topics. In any case the lack of connection raises a problem, and calls for explanation.

Part of the explanation may be sought in the fact that the writers who have developed the general theory of value have not been, in general, the writers who have most elaborated the theory of the value of money. The theory of money has been for a long time a more or less isolated discipline. In Ricardo, we have an elaboration of the labor theory of value, and we also have the quantity theory of money. But it is not clear that Ricardo added anything to the quantity theory. He found it, in much the form in which he used it, in the writings of predecessors, among them Locke and Hume. Ricardo makes large use of the quantity theory as a premise, but apparently feels the theory to be so self-evident that it needs little exposition or defence at his hands. John Stuart Mill is a clear exception to the general statement. Cairnes, likewise, did treat both topics in considerable detail, but while his interest in the general theory of value was that of the theorist, his treatment of money was primarily in the spirit of the publicist, and his interest was less in the justification of the theory—which he again seems to feel needs little defence—as in its

[1] P. 174.

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application. A similar statement may be made with reference to Jevons. He worked out his general theory of value for its own sake; his utterances on the theory of the value of money must be sought scattered through his practical writings on money. Alfred Marshall's *Principles* (Vol. I) says almost nothing about the theory of money; his opinions on that subject are to be found in some *ex cathedra* replies to questions from a Parliamentary Commission. The most important discussions in England of the value of money are to be found in the long polemic between the Currency and the Banking Schools, by writers who would not be listed among the makers of the general theory of value. In the United States to-day, with the exceptions of Professors Fisher and Taussig, the writers who have been interested in the general field of economic theory have done comparatively little with the value of money (*e. g.*, Professors Clark and Fetter), and the writers who have been most interested in the value of money have usually not written largely on the general theory of value (*e. g.*, Professors Laughlin, Scott, Kinley). Professor Kemmerer might well be included as an illustration of this last statement. His primary interest is in money, rather than general theory, even though he does precede his theory of the value of money with an exposition of the utility theory of value. In German, a similar situation obtains. Böhm-Bawerk has touched the theory of money scarcely at all. Menger has written an important article on "Geld" in the *Handwörterbuch der Staatswissenschaften*, but the important thing about this article is the theory of the origin of money, and the reader will find little on the problem of the value of money. Wieser has recently taken up the value of money (in articles published in 1904 and 1909), but no trace of his views has as yet manifested itself in the English literature on money, and the writer may here express the opinion that Wieser's

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contributions to the theory of money are not likely to be very influential, or to add to his reputation.[1] Austrian writers on the value of money, as Wieser and von Mises, have recognized more clearly than anyone in America or England, the essential dependence of the theory of the value of money on the general theory of value. The German writer on money who has attracted most attention recently, however, G. F. Knapp, troubles himself about the general theory of value not at all.

But the main explanation of the hiatus between the two bodies of literature and doctrine is to be sought in something more fundamental. Neither utility nor costs nor supply and demand furnishes an adequate basis from which the quantity theory, or any other theory of the value of money can be deduced. The cost theory, and the supply and demand theory, in their present-day formulation, are really not theories of value at all, but are theories of *prices*, theories which presuppose *value*, and *money*, and a *fixed value of money*. And the utility theory, as usually presented, is either a theory of barter relations, or else (more commonly) speedily settles down into the grooves of supply and demand, leaping by means of a confusion of utility curves and demand-curves (or sometimes by a deliberate identification of them, *e. g.*, Flux and Taussig [2]) to the treatment of market prices. I shall take up these points in order.

A historical summary of the development of the notions of supply and demand will aid the exposition. It may be noticed, first of all, that supply and demand is really a very superficial formula even though an exceedingly useful one.

[1] *Cf.* the discussion of Wieser, Schumpeter and von Mises in the chapter on "Marginal Utility," *infra*.

[2] Flux, W. A., *Economic Principles*, London, 1904, pp. 4, 27, 29; Taussig, F. W., *Principles of Economics*, New York, 1911, vol. 1, pp. 141–143. *Cf.* my *Social Value*, ch. 5.

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By virtue of its superficial character, it antagonizes few other theories, and it has been the common property of almost all schools of value theory. Cost theories and utility theories, labor theories, or social value theories, all find use for it, in one form or another. It is really quite neutral and colorless, so far as the ultimate questions of value-causation are concerned. The mo e fundamental causal factors offered by one theory or another are commonly supposed to operate *through* supply or demand, in price-determination. Adam Smith seems to see this more clearly than does Ricardo. Ricardo, indeed, sometimes thought of demand and supply as forces antithetical to the forces of labor-costs which he was considering. In ch. xxx of his *Principles of Political Economy and Taxation* (ed. McCulloch, pp. 232ff.) he holds that his natural value ultimately rules, except (p. 234) in the case of monopolized articles. Supply and demand govern the prices of monopolized articles and of all articles in the short run. I do not find in Ricardo any clear statement to the effect that cost of production operates *through* influence on supply. Neither Adam Smith nor Ricardo felt the need of very much precision in the definition of supply and demand. Smith does, indeed, distinguish "effectual" from "absolute" demand, in a well-known passage (ed. Cannan, I, p. 58), defining effectual demand as the demand of the effectual demanders, *i. e.*, these who are willing to pay the "natural price" of the commodity. The term "supply" he does not use in this passage, but speaks of the "quantity which is actually brought to market," and gives as the law of market price that it is determined by the "proportion" between this quantity and the effectual demand. That much is wanting in this analysis will be sufficiently clear when the views of J. S. Mill and Cairnes are considered. Ricardo offers even less than Smith in the way of definition. The

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reader may compare the pages in *Ricardo's Works* cited above, and the discussion of the demand for labor on p. 241 in the same volume.

In J. S. Mill, a clean-cut notion first appears. The doctrine that price is determined by a ratio between effectual demand (*i. e.*, the wish to possess combined with the power to purchase) and supply (*i. e.*, the quantity available in the market), is sharply criticised. How have a ratio between two things not of the same denomination? "What ratio can there be between a quantity and a desire, or even a desire combined with a power?" To make supply and demand comparable, demand must be defined as "quantity demanded," and then the difficulty arises that the quantity demanded will vary with the price, which seems to present a case of circular reasoning if demand is to be a determinant of price. The solution which Mill develops for this difficulty really gives us our modern conception, virtually complete except that Mill does not present it in the useful diagrammatic form and does not whisper the magic word, "margin." There is a demand-schedule, which, plotted, would give a demand-curve. At such and such prices, such and such quantities are demanded, or will be purchased. There is a supply schedule, presenting a supply situation of similar character (though not so clearly indicated). The price reached is that price which *equalizes* amount demanded and amount supplied. A higher price will lead to competition among sellers, forcing down the price, a lower price will lead to competition among buyers, forcing up the price. The notion of a *ratio* between supply and demand is replaced by the notion of an *equation* between them. The present writer wishes to remark, in this connection, that Böhm-Bawerk's elaborate analysis, with his "marginal pairs," etc., has not advanced one step beyond this conception of Mill's, that it is really less satisfactory than Mill's

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analysis, because of the impedimenta of pseudo-psychology it has to carry, and because of its confusion of utility schedules with demand schedules.[1] In our present-day expositions, as presented in the diagrams, we are accustomed to say that price is fixed when marginal supply-price and marginal demand-price are equal, putting the stress on the ordinate, rather than on the abscissa, on the identity of the dollars paid or received, rather than on the identity of the goods given or received. But this is merely another way of stating the same equilibrium which Mill perceived—when marginal demand and supply prices are equal, amount supplied and amount demanded will be equal, and conversely.

One point is to be added, making explicit what is implicit in the modern theory of supply and demand. Supply and demand doctrine assumes *money*, and a *fixed value* of money. That there should be a given schedule of money-prices for varying quantities of a good, is possible only if there be a given value of the money-unit.

That the modern doctrine of supply and demand necessarily involves the assumptions of value, of money, and of a fixed value of money, may be proved by the following considerations:

Supply-situation, represented by the supply-curve, and demand-situation, represented by the demand-curve, are conceived of as antithetical and independent causal forces, whose equilibrium determines both "supply and demand" (in the sense of quantities supplied and demanded) and price. Mill's doctrine that supply and demand determine price gets out of the circle that demand (amount demanded) is itself dependent on price, only by making both demand in this sense and price *results*, rather than causes, and by putting the causation back into

[1] *Cf.* the present writer's *Social Value*, chs. 3–6, inclusive.

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the more complex factors which I call "supply-situation" and "demand-situation." The two independent causes, then, are summed up in the supply-curve and the demand-curve. But, first, these curves are expressed in money. And second, a change in the value of money would affect *both* of them proportionately. But a theory which is concerned with supply and demand as independent and antithetical must abstract from factors which give them a *common* movement, without modifying their *relation* to each other. A change in the value of money would lead the supply-curve to move to the right, and the demand-curve to move to the left, the change in each being proportionate, and the amount supplied, and amount demanded, would remain unchanged. Changes in the value of money must, therefore, be abstracted from.

Again, we must precise the notion of an *increase* in demand, or of supply. Increase in demand may mean mere increase in amount demanded, consequent upon a lower price, consequent, *i. e.*, upon a lowering of the supply schedule. In this sense, increase in demand is a passive fact, a result rather than a cause. On the other hand, if the increase in demand is an increase in the amount demanded at the *same* price, if it means a change in the demand-situation, represented by the moving to the right of the demand-curve, we have a causal factor in increase in demand, a factor which raises the price and compels new supply to come into the market. We may distinguish these two meanings as increase in demand in the active and in the passive senses. *Mutatis mutandis*, we may speak of increase of supply in the active and passive senses. These distinctions have been made before, but it has not been clearly seen that these distinctions, and the connected doctrines, involve the assumption of a fixed value of money. But consider: it is the current doctrine that

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increase in demand in the active sense, the demanding of a greater amount at the same price, the moving of the demand-curve to the right, not only raises the price, but also tends to *increase the supply*. But this is true only if the *cause* of the increase in demand is not a cause which simultaneously works on supply, neutralizing that tendency. If the increase in amount demanded at a given price be due to a lowered value of money, then the same lowered value of money will reduce the supply available at that price *pro tanto*, and the new equilibrium, *caeteris paribus*, will be at a higher price, to be sure, but with the *same* amount supplied and demanded. "Demand" is a term which carries the connotation of motivating power in economic theory. Through demand run the forces which regulate production and supply. The function of increased demand is to induce increased supply. But the value concept, and the assumption of a fixed value of money, are needed to preserve this part of the doctrine. Without them we have no way of distinguishing a *real* increase in demand in the active sense, which does modify the adjustments in production, and alter the proportions of different supplies, from a *nominal* increase in demand in the active sense, which merely raises a money-price, without affecting supply.[1]

[1] I am here abstracting from an important factor, namely, that not all prices are affected equally by changes in the value of money. Some prices are fixed by law and custom, and some incomes are tied by long time contracts. Thus, it will happen, in many cases, that supply and demand for a given good will be unequally affected by a change in the value of money. This means that certain values are *tied* to the value of money, rising and falling with it, so that the amount of *power* which some elements in the economic situation are able to exert through supply-price-offer and demand-price-offer are at the mercy of changes in the value of money. But this is an element which is incalculable, on the basis of the supply and demand concepts, and must be abstracted from if we are to make any definite assertions as to the effect of increase or decrease of demand in the active sense on supply in the passive sense, or vice versa. Unless we make this abstraction, and unless we assume a fixed value of money, we might find increase of demand in the active sense (nominal) leading sometimes to an

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Another approach will lead to the same conclusion. Demand and supply-curves are not to be understood merely in terms of brute, physical quantities. They are rather curves expressing economic *significances*, manifesting *psychological* forces which lie behind them. No considerations of mere physical quantity will explain why one demand-curve should be "elastic" and another inelastic,—each curve has its own peculiarities, which are not mechanical in their nature. Demand-curves express the diminishing economic significance of goods as their quantity is increased. How economic significance is to be interpreted need not be argued here. I have elsewhere undertaken to show that the utility theory of value does not explain the economic significance which demand-curves express—that demand-curves are not utility curves. My own theory is that demand-curves are to be explained only in terms of a social psychology, that demand-curves are social-value curves. But my argument at this point does not rest on the particular type of causal theory of value one chooses. It is enough that the demand-curve be recognized as expressing economic significance, and diminishing economic significance.[1] But for the demand-curve to express variation in economic significance of a good, there is need for a unit in which to express that variation. That unit is the economic significance of the dollar, itself assumed to be invariable—as all measures must be assumed to be invariable if measurement is to mean anything. If the unit chosen vary in the course of a given investigation, the curve tells you nothing at all.

increase, and sometimes to a decrease of supply in the passive sense, or rather, being accompanied by either increase or decrease of supply in the passive sense. No law would be possible. In practice, both of these abstractions are more or less consciously assumed.

[1] I think that it is a feeling that Mill has left out the psychological factors in supply and demand which led Cairnes to the effort to give definiteness to other and vaguer notions on the subject.

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Another way of reaching the same conclusion is to say that an increase in demand in the active sense will lead to an increase in supply only if there be no corresponding increase in demand for the alternative employments of the sources of that supply, that, *e. g.*, an increased demand for wheat will lead to increased production of wheat only if there be not a corresponding increase in the demands for corn and other crops which can be raised on land and with labor and capital that would otherwise produce wheat. This is only another phase of the argument that went before, that an increase in demand due to a falling value of money would lead to a corresponding shift in the supply-curve. It is not quite the same argument, however, because that was an argument concerned with short run tendencies, resting on the assumption that the holders of supply would immediately react to a change in the value of money, whereas the argument just presented rests on the longer adjustments, based on the law of costs, as worked out by the Austrians. This point will be made clearer in the next chapter.

Yet another, and perhaps simpler, approach to the same conclusion is by pointing out that an individual, deciding to buy, must take account of the prices of other things in his budget—that individual demand-schedules would be different if market prices of other things—which depend on the value of money—were different.

The doctrine that supply and demand (and cost of production, the capitalization theory, and other elements in the current price-analysis) presuppose a fixed value of money, must be sharply distinguished from the doctrine of Professor Fisher (*Purchasing Power of Money*, ch. 8), and others, that a fixed *general price level* is assumed by supply and demand, etc. I should deny that a fixed general price level is assumed. The point rests in the distinction between value as *absolute* and value as *relative*. For my

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theory, it is perfectly possible for the general price level to rise, with the value of money constant, because of a rise in the values of *goods*. In a later chapter, on "The Passiveness of Prices," I shall examine the doctrine of Professor Fisher more closely, and set these two views in clearer contrast. For the present, it is enough to point out one vital difference between a rise in prices due to a fall in the value of money and a rise in prices due to a rise in the values of goods, with the absolute value of money unchanged: in the latter case, there is an increase in the psychological stimulus to industry, an increase in economic power in motivation, which energizes and increases production. In the latter case, especially when the fall in the value of money is rapid, and the rise in prices is clearly due to that cause (as in the case of Confederate paper, or the French *Assignats*), we find a reverse effect on industry. Intermediate cases, where money is falling in value, but where goods are also rising, give us intermediate results.

In what follows, I shall from time to time refer to this distinction. In my own exposition, I shall always use "value of money" in the absolute sense, as distinguished from the mere "reciprocal of the price level,"—a practice which I have sought to justify in the chapter on "Value," and in other places there referred to.[1]

The modern theory of supply and demand, then, assumes money, and a fixed value of money. It is, therefore, obviously unfitted as an instrument to solve the problem of the value of money. If supply and demand concepts are to be applied to this problem, they must be of a different sort. This was pointed out by Cairnes[2] who criticised

[1] *Cf. Social Value*, ch. 2; "The Concept of Value Further Considered," *Quart. Jour. of Economics*, Aug. 1915. For the doctrine that supply and demand, and other elements of current price theory, assume a fixed absolute value of money, see *Social Value*, p. 166, n., and ch. 17.

[2] *Leading Principles*, ch. on "Supply and Demand."

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Mill's formulation, and pointed out that Mill departed from it in three capital doctrines: in the theory of the value of money, in the theory of wages, and in the theory of international values. By the demand for money, Mill means, not the amount of *money* demanded, but the quantity of *goods* offered against money—a very different conception. (Mill, *Principles*, Bk. III, ch. viii, par. 2.) In what sense a quantity of goods can equal a quantity of money, or in what sense there can be a ratio between goods and money, (to recur to Mill's former problem as to the ratio between things not of the same denomination) Mill does not make clear, nor is it defensible to speak of either a ratio or an equation on the basis of Mill's system, since Mill had no absolute value concept. Cairnes seeks to reconstruct the notion of supply and demand, in such fashion as to make it possible to apply it universally, and takes up the question of the comparability of supply conceived as a quantity of goods, and demand, conceived, not as a quantity of goods, but as desire combined with the ability to pay. He concludes that in both supply and demand there is a physical, as well as a mental, element. Demand he defines as the desire for a commodity backed by general purchasing power; supply as the desire for general purchasing power, backed by the offer of a commodity. Thus he thinks he has made the two of the same denomination, so that comparison may be instituted between them, and the ideas of equation, ratio, and proportion made legitimate. By "general purchasing power," Cairnes seems to mean money and the representatives of money. It is not an abstract power, since it is the "physical" element in demand, comparable with, and of the same denomination with, the physical element in supply, a commodity. Cairnes' solution of Mill's difficulty seems to me to be merely verbal, however. First, in what way is the desire for general purchasing power

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in the mind of one man comparable with the desire for a commodity in the mind of another man? I pass over the supposed difficulty that knowledge of other men's emotions is impossible,[1] and emphasize simply the point that price offer, either by demander or supplier, is no test of the intensity of desire where there are inequalities in the distribution of wealth. But second: in what sense is general purchasing power, money and money-funds, of the same denomination as a commodity? Cairnes emphasizes the physical character of both. But surely they are not comparable on the basis of any physical attributes—weight, bulk, etc. Certainly if we look at the concept of demand here given, the physical aspect is simply irrelevant—gold money goes by weight, but what of paper money and credit instruments? And in what sense is even gold money physically of the same denomination with, say, wheat, or hay or base-ball tickets? Not physical quantities, but economic quantities, are relevant here; not weight or bulk, but *value*. By means of a concept of value, as the homogeneous quality of wealth, present in each piece of wealth in definite, quantitative degree, could Cairnes bring about comparability between the "physical" elements in supply and demand. But not otherwise. Only significances, values, are relevant here. Supply and demand presuppose value.

It will be interesting to consider the effort to solve the problem of the value of money by means of supply and demand on the lines employed by Mill, where demand for money is defined as quantity of goods to be exchanged, and supply of money as quantity of money times rapidity of circulation, and where physical quantities are treated as the relevant factor, no value concept of the sort here contended for being presupposed. This is, essentially, Mill's method. There is, in this conception, first the difficulty that "quan-

[1] *Cf. Social Value*, pp. 29–30, and 64–71.

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tity of goods to be exchanged" is not a true quantity at all, but is a mere collection of things of different denominations, dozens of eggs, pounds of butter, gallons of milk, etc., incapable of being funded into a quantity.[1] There is, second, the difficulty that increasing the amount of any one of the items in this heterogeneous composite need not increase the "demand" for money, in the sense that it increases the "pull" on money, or tends to increase the supply of money. Yet, under the general doctrine of supply and demand, an increase in demand should be a stimulus to increase in supply. Indeed, it is easy to construct a case where an increase in the quantity of one of the items in this composite, the others remaining unchanged, would actually tend to *repel* money, to reduce the *supply* of money. Suppose that one item in America's stock of goods, say cotton, is much increased in quantity, and suppose that cotton has a highly inelastic demand-curve, so that the increased quantity sells for less money than the original quantity.[2] Suppose, too, that cotton is our chief article of export, and that the bulk of our cotton is exported. Would not the "balance of trade" tend to turn against us, so that gold would tend to leave the country, and the supply of money be reduced? There is nothing in the situation assumed to raise the prices of other goods,[3] so that they could exert a coun-

[1] *Cf.* the discussion, *infra*, of "T" in the "equation of exchange."

[2] Cotton is chosen for this illustration because it has actually happened, more than once, that a large crop has sold for a smaller aggregate price than a smaller one. Thus, not to take an extreme illustration, the crop of 1910–11 was 11,568,334 bales. That of 1911–12 was 15,553,073 bales. The average price of spot cotton at New York from Oct. 1910 to June, 1911, inclusive, was almost 15c. per lb.; the average price of spot cotton in New York during the same months in 1911–12 was not quite 10 cents per lb. On this basis, the eleven million odd bales of 1910–11 sold for substantially more than the fifteen million odd bales of 1911–12.

[3] Nor is there anything in the hypothesis to reduce the number of times any good needs to be exchanged against money. Rather there would be an increase of exchanging, as speculation took place to bring about the

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teracting "pull" on money. Europeans, to be sure, having less to pay for cotton, could demand more of other things, and Americans paying less for cotton could demand more of other things. But, on the other hand, American producers of cotton, receiving less for their cotton—receiving precisely as much less as the others had more—could then demand less of other things, exactly as much less as the others are able to demand more. The original tendency for gold to leave the country, and the tendency for gold to leave the money-form and be used in the arts, would remain unneutralized. An "increase of demand for money," in Mill's sense, would in this case present the remarkable phenomenon of driving money away. Physical quantities are irrelevant. Psychological significances are what count.

It is interesting to note, in this connection, that some striking contradictions in quantity theory reasoning on any formulation, whether connected with the notions of supply and demand or not, are involved in this hypothesis. The illustration above gives a case where a lowered price level leads money to flow away from your country. But, on the quantity theory explanation of foreign exchange, it is *rising* price levels which drive gold away, and *falling* price levels which attract gold! [1]

Mill's effort to apply the notion of demand and supply to the value of money is, then, (1) not an application of his formal doctrine of supply and demand, and (2), is a failure, leads to results contradictory to the general law of supply and demand, as soon as we take account of the peculiarities of individual commodities, and cease to look at commodities in one huge lump. Psychological forces, rather than physi-

needed readjustments. For the present, I abstract from this. *Cf. infra*, the chapter on "Volume of Money and Volume of Trade."

[1] I shall recur to this point in the chapter on "The Quantity Theory and International Gold Movements."

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cal quantities, are what count. Whether or not the supply and demand notion of Cairnes, reinterpreted by putting a quantitative value concept into it, could serve as a means of approach to the value of money, I shall not here argue. No one so far as I know has attempted to do the thing that way, and my own theory is best developed by another method. It is interesting to note, however, another somewhat different effort to apply the supply and demand formula. General Walker does so, including among the factors determining the demand for money, not only the quantity of goods to be exchanged, but also the *prices* [1] prevailing. Since by value of money Walker means merely the reciprocal of the price-level, this is the clearest possible case of a vicious circle. It would be a circle even if he were trying to explain the absolute value of money, as distinguished from the reciprocal of the price-level, since the former is one of the determinants of the latter. Value of money and values of goods determine prices; prices and quantity of goods determine demand for money; demand and supply of money determine value of money,—a hopeless circle.

I know no sense in which the terms, demand and supply of money, can have relevance to the problem of the value of money. There is one sense in which the terms can be used which fits in with the modern supply and demand-curves, and that is the sense in which they are used in the money market. Demand for money comes from borrowers; supply of money from lenders. The price paid is a money-price, the curves express the short time money-rates, the rental of money, in terms of money, for stated periods of time. There is a relation, later to be investigated, between the rental of money, the money-rate, and the value of money, but the two are in no sense the same. It should be noted, too, that

[1] *Quart. Jour. of Economics*, 1894–95, p. 372.

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we are here concerned with "money-funds" rather than with money in the strict sense,—distinctions and relations in this connection properly belong at another stage of our inquiry. Whenever the terms, demand and supply of money, appear in the following pages, they will be used in the sense developed in this paragraph.

Demand and supply are superficial formulæ. They cannot touch a problem so fundamental as that of the value of money.

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CHAPTER III

COST OF PRODUCTION AND THE VALUE OF MONEY

WHEN the cost theory was a labor theory, as with Ricardo, the expression, cost of production of money, could have a definite meaning. It meant the labor-cost of producing the money metal. Even in this form, it is recognized that cost of production has a looser connection with value in the case of money than in the case of most commodities, because the supply of money metal is large and durable, and the annual production affects it slowly. But cost of production theories, in the form of labor theories, or labor-abstinence-risk theories, have little standing in modern economic theory. Ricardo himself saw the break-down of the pure labor theory; and Cairnes, Ultimus Romanorum, so limited and modified the "real costs" doctrine as to leave little validity in it, even on his own showing. The prevalent doctrine of cost of production runs in terms of "money-costs"—and hence is of no use when the problem of the value of money itself is to be solved.

A brief historical sketch of the cost theory will be helpful. Costs are sometimes conceived as a cause of value, and sometimes as a measure of value. Often these two aspects are mixed, and writers shift from one notion to the other. This is particularly true of the labor theory. In Adam Smith the contention sometimes is that labor is unvarying in value, hence an admirable measure of values, and an excellent standard of long-time deferred payments. Smith compares wheat and silver from the standpoint of the constancy of their relation to labor, and concludes that

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wheat is the better standard in the long run, because it remains more nearly fixed with reference to labor than does silver. Sometimes Smith thinks of labor as a cause of value, and thinks of the labor that enters into the production of a good as the significant thing. At other times, the labor that goods will command or purchase is the significant thing—and here one is not clear whether he thinks of labor as a cause or as a measure. Whether labor is to be funded as labor-pain, or as labor-time, Smith does not state. Sometimes labor seems to be considered as homogeneous in its efficiency. At other times, he makes comparison between different kinds of labor as to their efficiency, and compares the efficiency of labor in different occupations. One can find nearly anything one pleases in Adam Smith on these points. At times he speaks of "labor and expense," rather than labor alone, as governing prices.

Labor-cost to the laborer would take the form of labor-pain or labor-time. To the employer, it would take the form of outlay in wages. Adam Smith never makes any definite statement of point of view here, and shifts back and forth from one to the other. He recognizes variations in labor-pain, in danger, etc., in different kinds of labor when discussing wages.

Ricardo elaborated the labor theory of value, and tried to think it through. He was too keen a logician to shift view-points with Smith's facility, and he tried to make a completed system.[1] There is some shifting from the theory of labor as a cause of value to labor as a measure of value, as in the following passage: "If the state charges a seigniorage for coinage, the coined piece of money will generally exceed the value of the uncoined piece of metal by the whole seigniorage charged, because it will require a greater

[1] *Cf.* Davenport, *Value and Distribution*, and Whitaker, *Labor Theory of Value.*

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quantity of labour, or, which is the same thing, the value of the produce of a greater quantity of labour, to procure it." (*Works*, McCulloch ed., 213.) In general, however, Ricardo developed a causal theory of value, quantity of labor being the basis of the absolute values of goods, their *relative* values depending on the relative amounts of labor involved in the production of each. I shall not go into the matter fully, but shall call attention to the rock on which the system split, as Ricardo himself admits. A greater or less proportion of capital works with labor in producing different things, and the value of product, in that case, varies not merely with the labor, but also with the amount of capital, and the length of time the capital is employed. How say, then, that labor alone governs value? How reduce labor-cost and capital-cost to homogeneous terms? James Mill tried to do it for him by making capital merely stored up or petrified labor, which gives up its value again in production. But this doesn't meet the difficulty, because there is a *surplus* value, over and above that explained by all the labor, including the labor which produced the machine, and the labor which produced the raw materials which entered into the machine, etc. The case of wine is a particularly obstinate case. Wine increases in value merely with the passage of time, at a rate which corresponds to the profit on capital. Ricardo finally, in correspondence with McCulloch, definitely abandons the case, stating that there are many exceptions to the proportionality between exchange value and labor-cost. "I sometimes think that if I were to write the chapter on value again which is in my book, I should acknowledge that the relative value of commodities was regulated by two causes instead of one, namely, by the relative quantity of labor necessary to produce the commodities in question, and by the rate of profit for the time that the capital remained

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dormant." (Davenport, *Value and Distribution*, p. 41.) But this is a "dualistic" rather than a "monistic" explanation —one element is a money-expense, or at all events a pecuniary item, while the other is a "real cost" item. The two are incommensurate and incommensurable.

Senior seeks to supply the unifying principle. "Abstinence" and labor have pain as a common element, and so are commensurable. Costs, reduced to labor and abstinence, become homogeneous again. Monism is restored. Cairnes completes the doctrine by adding risk to the real cost elements: a triune cost concept, sacrifice being the generic fact in the three manifestations.

With John Stuart Mill, in general, we have an entrepreneur view-point. Money-expenses of production, entrepreneur outlay, plus wages of management, or including wages of management, are the factors with which Mill reckons. He is no longer concerned with psychological ultimates, or real costs. Cairnes criticised Mill sharply for this. No distinction is more fundamental he holds, than that between costs or sacrifice on the one hand, and rewards on the other. Labor, abstinence and risk are sacrifices; wages, interest, profits are rewards. None the less, in cost doctrine, as in supply and demand doctrine, it is Mill's view which has prevailed. Cost as conceived by Mill is a superficial, pecuniary notion. It tells little as to ultimate causation. But it is virtually only as a pecuniary doctrine, costs from the entrepreneur view-point, that the cost doctrine is met in modern theory.

Why is this? Well, first, the real-cost doctrine simply does not square with the facts. The hardest labor does not produce the most valuable goods. Value in fact does not vary either with labor-pain or labor-time. In fact, whatever the explanation, it would seem to be truer that the relation is an inverse relation. Nor does the abstinence that

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pinches hardest produce the largest amount of capital. And while there is some correlation between risks and profits, the correlation is at best low and is not a correlation between psychological sacrifice and profits. Even "marginal abstinence" for a Rothschild or a Rockefeller causes no pain. It is absurd to seek to find a common element in the "abstinence" of a rich man and the pain of a poor and aged laborer. I pass over the supposed difficulty that abstinence is, in general, suffered by one set of minds, and labor-pain by a different set of minds, and hence, since men cannot compare their own emotions with the emotions of other men, there is no comparability. This subjectivistic psychology would, of course, make it equally impossible to fund labor-pains of different laborers, or to get any common denominator at all.[1] It is enough to point out that differences between rich and poor, between successful and unsuccessful, between efficient and inefficient, (apart from acquired differences which may be smoothed out by the "stored up labor-of-training" principle) make labor-pain, and marginal labor-pain, vary greatly from value, and make labor-pain, abstinence and risk quite incommensurable, and quite without fixed relation to value. Cairnes saw this in part, and developed his doctrine of non-competing groups to deal with it. Labor-pain and value vary together only when we are comparing goods produced by laborers within a competing group. Laborers in one group do not compete with laborers in another group. There is perfect competition in the capital market, however, and so capital costs ("abstinence") are perfectly correlated with value, to the extent that capital enters. Cairnes seems to think that the whole difficulty with his real cost doctrine comes from the failure of competition. In fact, however, it comes also from the inequalities in

[1] *Cf. Social Value*, pp. 29–30; 74–71.

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wealth. And even in his highly competitive capital market it is equally true that abstinence, or even marginal abstinence (a term which Cairnes does not use) has no constant relation to amount of capital accumulated, value produced, or interest received. The cost theory breaks down at every point when it runs in labor-abstinence-risk terms. So generally has this been recognized, that the cost theory has generally given way to the utility theory, and cost doctrine when it appears in modern economics is either the very superficial money-outlay notion of Mill, or else the Austrian cost doctrine, later to be discussed, which is still a pecuniary concept. I have elsewhere undertaken to show (*Social Value*, chs. 3–7, and the ch. on "Marginal Utility," *infra*) that these defects of the "real-cost" theory, are just as much in evidence in the utility theory. The failure of the real cost theory of value is by no means a vindication of the utility theory. Both have the same vice—the effort to combine into a homogeneous sum a lot of individual psychological magnitudes measured in money, when the money-measure has a different psychological significance for each individual, and so comparison and addition are impossible. But in any case, the real cost doctrine of the Classical School has failed, and so cannot serve as the basis of the theory of the value of money.

Obviously the money-outlay cost theory of Mill cannot explain the value of money itself. The marginal cost of producing twenty-three and twenty-two hundredths grains of gold will always be a dollar, however the dollar may vary in value. Indeed, in general, the assumption of a constant value of the money-unit is implied in the monetary cost concept. Cost curves are *supply*-curves, and the reasoning already given as to the need for assuming constant value for money in the supply and demand concept will apply here. Costs function in value-determination only

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by checking supply. Rising costs tend to mean a lessened supply. But if the cost-curve is rising *because* of a fall in the value of money, then the demand-curve will be rising also, and production will not be checked. The general law as to the relation of cost to demand and supply assumes a fixed value of the unit of cost, the dollar.

To the Austrian economists we owe a rational theory of costs which gives the money-outlay concept more than a merely empirical basis. First, they see in costs not causes, but results. Value causation comes ultimately, not from the side of supply, but from the side of demand. I shall not now undertake a criticism of their explanation of demand. I have elsewhere criticised their confusion of demand-curves and utility-curves, and pointed out that marginal utility gives no explanation of demand. I shall recur to the utility theory of value at a later point. For the present, it is enough to point out that the Austrian theory of costs is independent of their utility vagaries, and rests best on the notion of supply and demand, as expressed in the modern curves, with the assumption of a fixed value of the money-unit. Costs consists of entrepreneur money outlay of various kinds, chiefly wages, interest, and rent. Rent is, for the Austrians, as much a cost as any other item of entrepreneur outlay. But these items of cost are not ultimate data. They are rather reflections of the positive values of the products. Value runs from finished product to agents of production, labor, and instrumental goods, and land. Avoiding needless complications from a discussion of interest as a factor in cost—a doctrine on which the Austrians, say Wieser and Böhm-Bawerk, are not agreed,—it is enough to point out that high wages or high rents, which limit production in any given industry or establishment, are high *because* the land and labor in question have *alternative* uses, because other industries, or other

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competitors in the same industry, bid for them. Cost-curves, then, are reflections of demand-curves. The cost-curve of wheat, *e. g.*, is what it is because of the demand-curve for corn, for cattle, and for every other commodity that could be produced with the same labor and land. Cost doctrine thus becomes part of the general doctrine of supply and demand, and runs in pecuniary terms, assuming money, and a fixed value of money, and hence is incapable of serving as a theory of the value of money itself.

That some vaguer form of cost doctrine, where the unit of cost is, not money, but some composite commodity of things used in the production of the standard money metal, or a unit of abstract value, might be worked out, is doubtless true. Gold production, like other industry, is part of the general economic scheme, and there is some sort of equilibrium reached which draws labor and capital now away from, and now back to, the gold mine. To bring this equilibrium into the general scheme of the modern theory of costs, however, in terms precise enough to make a satisfactory theory of the value of money, is a thing which has not so far been done, and I do not have high hopes of its early accomplishment. In any case, such a theory must rest upon a positive theory of value. Cost doctrine is negative, and can never be fundamental.[1]

[1] I incline to the view that the explanation of costs by foregone positive values needs supplementing by a recognition of the rôle of *negative social values*, and that thus interpreted, "real costs" have a minor part to play. But I have not thought the matter through satisfactorily, and shall find no occasion to use the doctrine in the present volume.

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CHAPTER IV

THE CAPITALIZATION THEORY AND THE VALUE OF MONEY

MONEY is capital. A dollar is a capital-good. Money is, moreover, a durable form of capital, which gives forth its services bit by bit, and indeed, in a community where the state bears the burden of wear and tear, never ceases to give forth those services. In any case, from the standpoint of a given individual, so long as there is a limit of tolerance prescribed for legal tender, it is a matter of accident if he ever incurs a loss from the wastage of the capital instrument, money, through wear and tear. Moreover, the fact that money is "fungible," and that its use is to be found in a process which commonly returns to the owner, not the same coin, but a different coin, we may, in general, abstract from the wear and tear of the dollar, and look upon the dollar as a capital instrument which promises its owner, if he chooses to use it as capital, a perpetual annuity. The nature of this money service will be more fully described later. For the present it is sufficient to say that exchange is a productive process, that exchange creates values, in as true a sense as manufacturing does, and that money facilitates exchange in as true a sense as coal facilitates manufacturing. There is, at any given time, a demand-curve for this money service, manifesting itself in the money market, a demand for the short time use of money as a tool of exchange, and the "prices" which come out of the interaction of demand and supply in the money market are the short time "money rates" including the "call rates."

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These are properly to be conceived, not as pure interest on abstract capital, but as rents [1] which are to be attributed to money as a concrete tool.

Now, in general, when such rents appear, they may be capitalized. And the price of the instrument of production that bears these rents, will be the sum of the rents, discounted at the prevailing rate of interest, with considerations of risk, etc., allowed for. The reasoning of the capitalization theory is really quite simple. Take, for example, a piece of urban site land, which is expected to bring a perpetual annuity of one hundred dollars. The whole economic significance of the land is contained in its services, present and prospective. The possession of land under certain circumstances brings other services, as social prestige, than the services which can be alienated to a lessee. But in this case I am abstracting from considerations of that sort, and also from the factor of risk. The whole value of the piece of land under consideration comes from the value of the one hundred dollars a year. But these annual incomes are not all equally valuable, even though all expressed as one hundred dollars. The first one hundred dollars is due one year hence, the tenth ten years hence, the thousandth, a thousand years hence. The principle of perspective comes in—I abstain from any detailed discussion of the theory of interest, simply stating that in a general way I agree with the contention that *time* constitutes the essence of the phenomenon, or rather, the tendency to discount the future. The capital price of the land is the sum of an infinite convergent series of the

[1] This doctrine as applied to rates on call loans appears in Seligman's *Principles of Economics*, 1912 ed., p. 395. The peculiarities of call loans have also been discussed by C. A. Conant, *Principles of Money and Banking*, I, p. 171. Conant there refers to a discussion by Joseph F. Johnson, in *Pol. Sci. Quarterly*, Sept. 1900, p. 500. There are some very interesting distinctions between the "hire price" and the "purchase price" of money developed by J. A. Hobson, in his *Gold, Prices and Wages*, pp. 153 *et seq.*

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"present worths" of the incomes. The formula is as follows: capital price of land $= \frac{\$100}{1.05} + \frac{\$100}{(1.05)^2} + \frac{\$100}{(1.05)^3} \ldots + \frac{\$100}{(1.05)^n}$ when the rate of interest is 5%. The limit of this series, assuming the series to be infinite, is $2000, and a simple formula for calculating it under the assumptions, is to divide $100, the annual income, by .05, the rate of interest. Given the annual income, given the prevailing rate of interest, the capital price is determined. The relation may be illustrated, roughly, by the figure of a candle, a disk, and the shadow of the disk on the wall. The disk represents the annual income, the shadow on the wall the capital value, and the distance between the flame and the disk the rate of interest. Increase the distance between the flame and the disk, the rate of interest, and the shadow becomes smaller; shorten the distance, and the shadow is increased. Similarly, enlarge the disk, and the shadow is enlarged. The capital value varies directly with the annual income, and inversely with the rate of discount. Now my purpose here does not involve a detailed examination of the validity or limitations of the capitalization theory. For the present, the only question is, has this theory any application at all to the problem of the value of money? It offers itself as a general theory of the values of durable bearers of income. Money is a durable bearer of income.

The capitalization theory, however, is of no use for the purpose in hand. Money does not obey the general law in the relation which the magnitude of the income bears to the rate of interest. In general, the income and the rate of discount are independent variables. Their influence, operating in opposite directions, fixes the capital value, increasing income increasing the capital value, increasing discount rate reducing it. In the case of money, however, the two factors are not independent. The short time

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money rate is not, to be sure, identical with the long time rate of interest, which is the rate of discount for the purpose in hand. But the two tend to vary together in the long run average in fact, and they are related in the *expectation* of those who are concerned in the capitalization process.

In our chapter on the "Functions of Money," in Part III, it will be shown that normally there tends to be a difference between the money rates and the long time interest rates, the long time rates tending to be higher than the rates on short loans, the rate on very short loans being lower than the rate on somewhat longer short time loans, and the call loan rate being lowest of all. The explanation of this must be deferred till we have analyzed the functions of money. But the important thing, for present purposes, is that the money rates, though lower than the "pure rate" of interest, tend to vary, in long time averages, with that "pure rate," [1] and that, consequently, the income from renting money, and the discount rate to be applied in capitalizing that income, are not independent magnitudes, but tend to vary together. They thus tend to neutralize one another. If money rates go up, and if they are expected to stay up long enough to justify (on the ordinary capitalization theory) a rise in the capital value of money, we have a counteracting influence in the long time interest rate, which also rises, and tends to pull down the capital value of money. To recur to our illustration of the candle and the disk, as the disk increases in diameter, the distance between the candle and

[1] One "pure rate" of interest, for loans of all periods over, say, three years, is doubtless, a myth, or better, a methodological device for simplifying thinking in connection with the theory of interest, and the capitalization theory. It is not necessary for our purposes, however, to give detailed analysis to the notion. We shall discuss the capitalization theory as we find it, assuming that, as a matter of fact, the difference between loans of 20 years and loans of 35 years, or in perpetuity, of equal quality in other respects, may be abstracted from, with safety.

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the disk grows greater, and so the *shadow* tends to remain the same.

There is a further difficulty, to which attention will be called more fully in later chapters, particularly the chapter on "Dodo Bones," and the chapter on the "Functions of Money." In other cases, in general, the capital value is, as the capitalization theory requires it to be, a true shadow, a passive function of the income and the discount, of the disk and the distance between the candle and the disk. In the case of money, however, the income is causally dependent, in part, upon the capital value. Money can function as money only by virtue of having value. The shadow becomes substance in the case of money. It is the *value of money* which makes possible the *money work*. The capitalization theory, thus, if applicable at all, must be radically modified before being applied. We shall subsequently, in the chapters above referred to, take account of this fundamental complication. For the present, we can state it merely as a problem: how can we construe the interaction of the income value of money and the capital value of money in such a way as to avoid a circular theory?

But further, the capitalization theory, as heretofore formulated, like the doctrines of supply and demand and cost of production, assumes *money*, and a *fixed absolute value* of money. This assumption must be made if we are to be able to predict, on the basis of the capitalization theory, that a given annual income, at a given rate of discount, will give a specified capital value. This may be shown by the following considerations: If men anticipate that the value of the income, which is a fixed sum of dollars, is to grow less in the future, then the present worth of the bearer of that income will shrink to an extent greater than the "pure rate" of interest would call for. The principle of

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"appreciation and interest" comes in. The nominal interest, in times of falling value of money, tends to exceed the pure rate by an amount which compensates for the loss in value of future income as the dollar falls in value. We have here, however, a principle different from the principle of time discount. It is not the influence of time, which makes a *given* value appear smaller as it is further removed in time, but it is an anticipated lessening in the value of the income itself, that counts. In terms of our candle and disk illustration, it is a factor affecting the size of the disk, rather than a factor affecting the distance between the disk and the candle. For the purposes of calculation, the two elements in the nominal rate of interest may be lumped together, and the nominal rate, rather than the pure rate, may be taken as the rate of discount for capitalization purposes. But for theoretical purposes, the two must be kept distinct. The capitalization theory rests on the assumption of a fixed value of the money unit.

That the fixed value of the money unit assumed is an absolute value, and not a mere "reciprocal of the price level," may be proved by some further considerations regarding relations among these same factors. Assume a fall in the rate of interest. Then, on the capitalization theory, prices of lands, stocks and bonds, houses, horses, and all items of wealth which give forth their services through an appreciable period of time, will rise, and with them the average of prices, or the general price level, will rise.[1] If one hold the *relative* conception of value, according to which the value of money necessarily falls when prices

[1] The price-level is a *weighted* average. These elements dominate it. *Cf.* our discussion, in the chapter on the "Volume of Money and the Volume of Trade," *infra*, of the elements entering into trade. We shall make use of the capitalization theory at various points in our discussion of general prices. *Cf.* the chapter on "The Passiveness of Prices," where it is shown that the capitalization theory and the quantity theory are irreconcilable.

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rise, because the two are merely obverse phases of the same thing, then this rise in the price level is, *ipso facto*, a fall in the value of money. But we have seen that a fall in the value of money means, on the "principle of appreciation and interest," a rise in the interest rate! Hence, we would have proved that a fall in the interest rate causes a rise in the interest rate—which is absurd. If, however, we recognize that prices can rise without a fall in the value of money, if, *i. e.*, we use the absolute conception of value, this difficulty disappears. The capitalization theory and the theory of appreciation and interest can be reconciled only on the basis of the absolute conception of value.

The capitalization theory, then, in its present formulation, assumes money, and a fixed absolute value of money. It is, therefore, inapplicable to the problem of the value of money itself.

In general, none of the polished tools of the economic analysis,—neither cost of production, the capitalization theory,[1] nor the law of supply and demand,—is applicable to the problem of the value of money. The reason is that

[1] There is an extensive body of controversial literature connected with the capitalization theory, which it is unnecessary, for present purposes, to consider. One interesting line of doctrine is that developed by DR Scott (*Jour. of Pol. Econ.*, Mar. 1910) and H. J. Davenport (*Yale Review*, Aug. 1910), in which ordinary formulations are criticised as assuming a "social rate" of interest, and in which the effort is made to work the thing out on the basis of extreme individualization, each man having a rate of discount of his own. I have accepted the doctrine in the general form in which it has been developed by Böhm-Bawerk (in criticism of Turgot and Henry George in his *Capital and Interest*), by Fetter, in his *Principles of Economics*, and by Fisher in his *Rate of Interest*, abstracting from points on which these writers disagree. My criticism of their doctrines, were it necessary here to develop it, would rest on the ground that their treatment of the general interest problem is too individualistic, and I should side with them as against Scott and Davenport. But these matters are aside from our present problem.

In our chapter on "Marginal Utility" we shall meet the capitalization theory again, as applied to the value of money by David Kinley. We shall also take it up in the chapters on "Dodo Bones," and "The Functions of Money."

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they get their edge from money itself. The razor does not easily cut the hone. It is to this fact, I think, that we owe the widespread and long continued vogue of a theory so crude and mechanical as the quantity theory. In the next chapter we shall show that the utility theory of value—which we shall not recognize as a polished tool!—has also failed to give us help in explaining the value of money.

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CHAPTER V

MARGINAL UTILITY AND THE VALUE OF MONEY

A GOOD many writers have attempted to apply the marginal utility theory to the value of money. Among these, I may particularly mention Friedrich Wieser, Ludwig von Mises, Joseph Schumpeter, and, in America, David Kinley, and H. J. Davenport.

The marginal utility theory is ordinarily merely a thinly disguised version of supply and demand doctrine. As usually presented in the text-books, we have an analysis of the phenomenon of diminishing utility of a given commodity to a given individual, illustrated by a diagram, in which the ordinates represent diminishing psychological intensities. Often a money measure is given to these diminishing intensities, and the curve is presented as the demand schedule of a given individual. Then, with little further analysis, a leap is made to the market, and it is assumed that the market demand-curve, of many individuals, differing in wealth and character, is a utility-curve, and value in the market is "explained" by means of marginal utility. I need not here repeat my criticisms of this procedure.[1] It gives simply a confused statement of the doctrine of supply and demand. The analysis of utility which precedes the discussion of market demand is wholly irrelevant, and merely mixes things up. That such a conception is of no use in solving the problem of the value of money has been sufficiently indicated in the chapter on supply and demand.

[1] *Social Value*, chs. 3–7. The point is discussed *infra* in the present chapter.

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Sometimes the contention is made that money is unique among goods in having "no power to satisfy human wants except a power *to purchase* things which do have such power."[1] This contention, in Professor Fisher's view, precludes the application of the marginal utility theory to the problem of the value of money, and he makes no use of marginal utility in his explanation. Indeed, in the passage from which this quotation is taken, Professor Fisher says that the quantity theory of money rests on just this peculiarity of money. Not all writers who contend that money has no utility *per se*, however, have felt it necessary to give up the marginal utility theory as a theory of money, as we shall later see.

On the other hand, writers of the "commodity school" (or "metallist school"), writers who see the source of the value of money in the metal of which it is made, can apply the utility theory readily to the value of money, making the value of money depend on the marginal utility of gold, or the standard metal, whatever it is. To the writers of this school, it is incredible that anything which has no utility should become money. Money must be either valuable itself, or else a representative of some valuable thing. The value of money comes from the value of the standard of value, and that value may, so far as the logic of the situation is concerned, be as well explained by marginal utility as the value of anything else. Typical of this view is Professor W. A. Scott's discussion in his *Money and Banking*[2] though the emphasis there is not on marginal utility as the explanation of the value of the standard, but on the value (conceived of as an absolute quantity) of the standard as essential to the existence of money, and the performance of the money functions. Professor Scott attacks vigorously and effectively Nicholson's exposition of the quantity the-

[1] Fisher, I, *Purchasing Power of Money*, p. 32. [2] Edition of 1903.

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ory,[1] where the assumption is made that money consists of dodo-bones (the most useless thing Nicholson could think of). Most quantity theorists would share Nicholson's view that dodo-bones would serve as well as anything else for money—or, to put the thing less fantastically, that the substance of which money is made is irrelevant, that the only question is as to the quantity, rather than the quality, of the money-units, and the quantity of the money-units, not in pounds or bushels or yards, but in abstract number merely. For writers who seek the whole explanation of the value of money in its monetary application, and who see that money, *qua* money, cannot administer directly to human wants, the view that Professor Fisher expresses, namely, that money has no utility, and is unique among goods in this respect, seems on the surface, to have justification. On the surface merely, however. Money is not unique among goods in being wanted only for what it can be traded for. Wheat and corn and stocks and bonds and everything else that is speculated in is wanted, by the speculators, only as a means of getting a profit [2]—they are remoter from the wants of the man who purchases them than the money profit he anticipates. Ginsing, in America, has value, though consumed only in China. And there are people, particularly jewelers, who often want money as a raw material for consumption goods. The difference is at most a difference of degree—and of slight degree indeed in the case of such things as bonds, which count on the "goods" side of the quantity theory price equation, but which really are in all cases remoter than money itself from human wants. Money really stands, for the purpose in hand, on the same level as any other instrumental good.[3] It

[1] *Cf.* the chapter on "Dodo Bones," *infra*.

[2] *Cf.* Menger's art. "Geld," Conrad's *Handwörterbuch*, 328, 3rd ed., vol. iv, p. 566.

[3] *Cf.* Helfferich, *Das Geld*, ed. 1903, p. 480.

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does not give forth services directly, as a rule. Neither does a machine, or an acre of wheat land, or goods in a wholesaler's warehouse. Exchange is a productive process, an essential part of the present process of production. Money is a tool which enormously facilitates this process. It has its peculiarities, no doubt. One of them is—and money is not unique in this as will later appear—that it must have *value* from non-monetary sources [1] before it can perform its own special functions, from some of which it draws an increased value. But there seems to me to be nothing in the contention quoted from Professor Fisher, to justify setting money sharply off from all other things, or to justify the view that marginal utility is inapplicable to the value of money, if it be applicable to the value of anything at all that is not destined for immediate consumption. I do not believe that the marginal utility theory is valid for any class of goods, not even those for immediate consumption. Where marginal utility theory is,—as in the conventional text-book expositions—merely another name for supply and demand theory, it is, as already shown, not applicable to the value of money, and it is useful in the surface explanation of market-prices of goods. But where marginal utility theory really seeks to get at value fundamentals, it is precisely as valid for money as for goods of other sorts—invalid, in my judgment, in both places, and for the same reasons in both.

Among the writers who would apply the utility theory to money, while still insisting that money, as such, has no utility, are Wieser, Schumpeter—who accepts Wieser's theory in its main outlines—and von Mises, who develops a notion very different from that of the other two.

Wieser's doctrines are set forth in two expositions, separated by five years, the second representing a considerable development in his thought, though resting in part on the

[1] Discussed more fully *infra*, chapter on "Dodo Bones."

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first. The first is an address upon the occasion of his accession to the professorship at the University of Vienna, in 1904, and is published in the *Zeitschrift für Volkswirtschaft, Sozialpolitik und Verwaltung*, vol. 13 entitled, "Der Geldwert und seine geschichtlichen Veränderungen." The second is a discussion, partly written and partly spoken, "Der Geldwert und seine Veränderungen" (written), and "Ueber die Messung der Veränderungen des Geldwertes" (spoken), in *Schriften des Vereins für Sozialpolitik, Referate zur Tagung*, no. 132, 1909. For the purpose in hand, a brief statement of one or two points would suffice to show the futility of Wieser's effort to get an explanation of the value of money *via* marginal utility, but I think that readers may be interested in a fuller account of Wieser's doctrine, just because it is Wieser's, and so shall undertake to give a more systematic account of it. For brevity, in the exposition which follows, I shall refer to the first article as "I," and to the second as "II."[1]

Wieser holds that it is possible to have money wholly apart from a commodity basis (I, p. 45), citing the Austrian *Staatsnoten* as a case in point. The reason for giving them up is that they do not circulate in foreign trade. Gold fulfills its international money-functions the more easily because of its various employments, but, after it is thoroughly historically introduced, as money, it could fulfill its money functions even if all these employments be thought away (46). Wieser gives no argument for this contention, and its validity will be examined later.[2] There are, he says, two sources for the value of gold, the money use and the arts use, interacting. Money is further removed from wants, not only than consumption goods, but also

[1] I make virtually no reference to the "spoken" part, which is chiefly concerned with index numbers.

[2] Chapter on "Dodo Bones."

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than production goods, which are but consumption goods in the seed. The latter are technically destined for definite goods. But money may be used to procure whatever good you please, in exchange. (The absoluteness of this distinction, also, may be questioned. Pig iron is almost as unspecialized as money in its relation to wants, since tools enter into the production of almost every service that human wants require, from surgical operations, through instrumental music, to wheat and horse-shoes. On the other hand, money is not the only thing by means of which other things are purchased. The extent of barter in modern life will wait for later discussion.[1] I do not think that *any* sharp distinction between money and all other things is valid.) Wieser complains of the older economics which treats money as a commodity. And he contends that as money and commodities show a contrast in their essence (*Wesen*), they should also manifest a contrast in the laws of their values, even though the fundamental general theory of value applies to both (I, 47). He finds in representatives of money (*Geldsurrogate*), and in velocity of circulation of money, factors which are lacking in commodities. (Again a question must be interjected by the writer. Are not corporation securities essentially like *Geldsurrogate* from this angle? And do not goods vary greatly in the number of times they are exchanged? What of the speculative markets, where more sales are made in an active market, at times, than there are commodities or securities of the type dealt in in existence?) The value of money is essentially bound up with the money-service. Wieser indicates that he is not talking about the subjective value of money, but its objective value, using the popular meaning of the term, which, he says, is not strictly logical, but is useful: the relation of money to all other goods which are exchanged,

[1] Chapter on "Barter."

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the purchasing power of money. This depends on goods as well as on money. In the second article, Wieser refines and elaborates his conception of the objective value of money, seeking to get away from the notion of relativity which is involved in the conception of purchasing power, and to get an absolute conception, which shall be a causal factor in the determination of general prices, rather than a mere reflection of them. It is to be a coefficient with the objective values of goods in determining prices. A change in general prices may be caused by a change in the value of money, and may be caused by a change in the values of goods (II, p. 511). In explaining this objective value concept (which, in its formal and logical aspects, is in many ways similar to the absolute social value concept maintained by the present writer, though, in the present writer's judgment, inadequately accounted for by Wieser, so far as a psychological causal theory is concerned) Wieser objects to the term, "objective value" which he had used in the earlier article. He prefers "volkswirtschaftlicher Wert." (This term is perhaps best rendered "public economic value," for present purposes, to distinguish it, on the one hand, from individual or personal value, and, on the other, from the social economic value concept of the present writer. At the same time, the connotation of a communistic or authoritive value must not be read into the term. It is, in its formal and logical aspects, really the most common of all the value notions, and may, best of all perhaps, be translated simply "value," or "economic value," or "absolute value." But for the present discussion, we shall call it "public economic value.") This public economic value, in the case of goods, is not a mere objective relation between a good and its price-equivalent. It is a subjective (psychological) value, like personal value. If one wishes to call it objective value, one is using objective in the sense

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of the general subjective as distinguished from the personal individual idiosyncracy (II, p. 502). The objective exchange value of goods (here Wieser uses "objektiver Tauschwert" as the equivalent of his "volkswirtschaftlicher Wert" above mentioned) is the common subjective part of the individual valuations leaving out the remainder of individual peculiarities ("der allgemein subjective Teil der persönlichen Wertschätzungen mit Verschweigung des individual eigenartig empfundenen Restes").[1] Wieser does not seem to me to think out clearly the distinction between absolute and relative value in this connection. He wishes to get something more fundamental than a mere relation between goods and money; he wishes a psychological phenomenon. He wishes to have a value of goods which can be set over against the value of money, the two, in combination, determining prices. And yet, he wishes somehow to get these out of the prices themselves. "We must seek a concept of the public economic value of money which, to be sure, proceeds from the general price-level (*Preisstand*), but which excludes from its content everything that comes purely from the value of goods" (II, 511). To the public eco-

[1] In its psychological explanation, this bears somewhat the same relation to the social value concept of the present writer that the social mind concept of Giddings and Lewes bears to the social mind concept of the present writer. *Cf. Social Value*, ch. 9. Wieser's concept excludes individual peculiarities. It is an abstraction from individual values, a distillation of their common essence. The social value concept of the present writer is a focal point in which are summarized all the individual values, whether alike or divergent, and not merely the individual marginal utilities of the goods in question (Wieser's only factors) but also the individual emotions which affect the distribution of wealth. Wieser's concept is based on a study of individual marginal utilities considered as atomic elements; that of the present writer looks on the social mind as an organic whole, in which individual mental processes are phases, and does not try to synthesize a social value out of elements, but rather, to analyze it into elements. In the function in economic theory for which they are destined, however, the two concepts have much in common. Both seek to be the fundamental economic quantity. Both seek to be causal forces, lying behind prices, even though expressed in prices; both oppose the conception of value as merely relative.

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nomic value of money, however, Wieser gives no independent definition. The definition runs in terms of the values of the goods. "The value of money rises when the same inner values (*innere Werte*) of commodities are expressed in lower prices; it falls, when they are expressed in higher prices" (II, 511–12). "Inner value" of goods is not defined, but I take it that Wieser uses it as meaning essentially the same thing as the public economic value already described—an absolute value. (*Cf.* the usage of Menger and von Mises, *infra*, in this chapter, with respect to the terms, "inner" and "outer" value.) The definition is not strictly circular, perhaps, but at least it is pretty empty. Nothing appears to give the value of money, as distinct from its purchasing power, an independent standing. The reason for this will later appear. It should be noted, however, that the definition is not in terms of prices or purchasing power. Prices might remain unchanged, in Wieser's scheme, and yet the value of money sink, if the inner values of goods should sink.

The value of money, thus defined, is to be explained by marginal utility. But money has no marginal utility of its own, it has no subjective use-value, but only a subjective exchange value,—derived from the use-value (marginal utility) of the commodity purchased with the marginal dollar (II, 507-8). This subjective-exchange value of money is the personal value of money, as distinguished from its public economic value, and is the cause of the public economic value. The personal value of money changes (1) with the volume of one's personal income, (2) with the intensity of one's need for money, and (3) with market prices. The personal value of money is directly influenced and measured only in exchanges for consumption goods. Expenditures of other kinds affect it only indirectly

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by leaving less for consumption expenditures. The laborer always reckons with the personal value of money, but not the business man, in his business calculations. As in the case of goods, we pass from personal to public economic value (II, 509). The personal value of money depends on the relation between an individual's money income, and his real income, in terms of goods. The public economic value of money depends on the money income of the community as a whole, and its real income. (II, 516–18). Money income grows faster than real income, through the extension of the money economy. Money income is not, like real income, dependent on quantity. The mere extension of the money economy increases the volume of money income, lowers the personal value of money, lowers its public economic value, and raises prices. Witness the effect on a rural community of bringing it into the great market, where all costs are reckoned in money and rising costs compel rising prices. Hence, there is a tendency for the public economic value of money to sink, and this has been the historical fact (I, II, 519–520.)

Criticism of this theory is almost superfluous. There are elements in Wieser's discussion, not here presented, which have very considerable importance, and which will be presented in a later chapter when the criticism of the quantity theory is taken up. Wieser deals some heavy blows to the quantity theory. But his constructive doctrine presents the clearest possible case of the Austrian circle. The value of money depends, not on its subjective use-value, its own marginal utility—it has none. The value of money depends on its subjective value in exchange, the marginal utility of the goods which are exchanged for it. But these depend on prices. And prices depend, in part, on the value of money itself! This circle, present in every form of the Austrian theory which seeks a causal explana-

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tion of value and prices by means of marginal utility,[1] though often less obviously present, is here quite glaring. The distinction between volume of money income and quantity of money is, on the other hand, an important one, and will be emphasized when the quantity theory is taken up.[2] One further point in Wieser's doctrine calls for comment. It is strange indeed to find an Austrian seeing in a rise in money costs a *cause* of a general rise in prices. The Austrian doctrine is rather that rising money costs are *reflections* of rising general prices. Wieser's doctrine that the extension of the money economy to rural regions, compelling the farmer to reckon all his costs in money and so to raise his prices, has been adequately criticised by von Mises, who points out that Wieser sees only half the phenomenon; that eggs and butter are, indeed, higher in price in the rural region when it comes into contact with the city, but that they are correspondingly lower in the city from the same cause. On the other hand, the doctrine of costs is not the whole point in Wieser's notion of the extension of the money economy as a cause of higher prices, and we shall deal with the doctrine again, in a different connection.

By devitalizing the marginal utility theory, by stating it in such a way that it makes no causal assertions, and in such a way that it leaves the real value problem untouched, it is possible to free it from the circle just pointed out. Schumpeter does so state it.

Schumpeter's theory of value,[3] though he attributes it

[1] *Social Value*, chs. 5, 6, 7, and 13. *Infra* in the present chapter.

[2] See especially the chapter on "The Passiveness of Prices."

[3] *Cf.* the writer's "Schumpeter's Dynamic Economics," *Political Science Quarterly*, Dec. 1915. Schumpeter's theory, as there presented, is based on the brief discussion in his *Theorie der wirtschaftlichen Entwicklung* (Leipzig, 1912), pp. 61 *et seq.*, 105, 166–667, 116, 464, and on Schumpeter's verbal expositions of the theory during his American trip. Since that account was

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to Böhm-Bawerk, seems to the present writer to be essentially different. Böhm-Bawerk undertakes to explain the value (objective value in exchange) of each good by its *own* marginal utility to different individuals, buyers and sellers of the good—indeed, by its marginal utility to *four* individuals, the two "marginal pairs." [1] He sees at points that the prices of other goods are sometimes factors, making marginal utility give way to "subjective value in exchange," as the determinant of an individual's behavior toward a given good in the market—as in his much discussed overcoat illustration.[2] But Böhm-Bawerk never gets out of the circle which this reaction of the market-prices on the individual subjective values involves. Schumpeter seems to rise to a higher conspectus picture, which, in form, avoids the circle. His picture is that of a vast equilibrium, in which,

published, Professor W. C. Mitchell has given an account of Schumpeter's doctrine, based on the fuller discussion in Schumpeter's *Wesen und Hauptinhalt der theoretischen Nationalökonomie*, which is in accord with the account here given. (Mitchell, in *Papers and Proceedings*, Supplement to March, 1916, *American Econ. Rev.*, p. 150.) Mitchell attributes the essential elements of Schumpeter's theory to Walras. The first exposition in English of the conception, so far as the present writer is aware, is in Irving Fisher's *Mathematical Investigations in the Theory of Value and Prices*, *Trans. Conn. Acad. of Arts and Sciences*, 1892. Professor Fisher, in his preface, accords priority to Jevons, Auspitz and Lieben, and to Walras. The conception is not to be found in Jevons, though many of the ideas involved in it are. The first non-mathematical exposition of the doctrine, so far as I know, is by Schumpeter. As will be made clear in a footnote at the end of the present chapter, neither Wicksteed nor Davenport has really forced the problem through, to the full equilibrium picture, and neither has escaped the Austrian circle. I do not concur with Professor Mitchell's interpretation of Wicksteed on this point. It may well be that mathematical method, with a system of simultaneous equations, was necessary for the development of the idea. If so, it illustrates both the strength and the weakness of mathematical economic theory: it clarifies thinking, but it gets no causal theory! At all events, no causal theory emerges in this case.

[1] *Positive Theory of Capital*, Bk. IV, and *Grundzüge der Theorie des wirtschaftlichen Güterwerts*, in Conrad's *Jahrbücher*, 1886. The writer who would adhere to Schumpeter's doctrine must give up all notion that any individual occupies a critical "marginal" position. All men are equally marginal in Schumpeter's scheme.

[2] *Positive Theory of Capital*, p. 156.

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instead of attributing the market value of each good to its own marginal utility, you explain the exchange ratios[1] of every good to every other good, all at once, by reference to a total situation: *given* the number of goods of each class, given the number of individuals in the market, given the *distribution* of each class of goods among the individuals, given the utility-*curves* (not marginal utilities) of each good to each individual, an equilibrium will be reached, through trading, in which ratios between marginal utilities of each kind of good to each individual are inversely proportional to the abstract ratios (ratios of exchange) between the same goods, each measured in its own unit. The ratios are abstract ratios, between pure numbers, so far as the market ratios are concerned; the ratios in the mind of each individual are concrete ratios, between marginal utilities. The scheme, thus stated, says nothing as to the *causal* relation between marginal utility and market ratios; it merely states certain *mathematical* relations between each individual system of marginal utilities on the one hand, and the abstract market ratios on the other. By avoiding *assertions* as to causation, it avoids a causal circle. In such a situation, marginal utilities and market ratios are, in reality, alike resultants, *effects*, of the given quantities of goods, distribution of goods, numbers of buyers and sellers, and individual utility-*curves*—not *marginal* utilities. To this picture, one may add—what Schumpeter does not add—the curves showing time-preferences of each individual for each sort of good, and (an element which Schumpeter does include) the curves of *dis*-utility for the individuals who produce each kind of good. The system, it may be noted, is as good a proof of *real cost* doctrine as it is of utility doctrine.

[1] Schumpeter's scheme gives no money-prices. No form of this scheme gives any quantitative values. Nothing but ratios can come from it.

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Such a picture, I submit, avoids the circle which is presented in all other formulations of the Austrian theory of value. I wish, however, to indicate its limitations as a theory of value, and the impossibility of any application of it to the problem of the value of money. (1) Its data are inaccessible: nobody could possibly know all the utility-curves and all the time-preference curves (and disutility of labor-curves, etc.) of all goods to all individuals in, say, the United States. To explain market ratios by utility-curves is a case of *ignotum per ignotius*, so far as practical application is concerned. Moreover, the scheme is so difficult to visualize that it is useless as a tool of thought—as one will find who tries to think it through, without the aid of higher mathematics, for ten goods, and ten persons, with unequal distribution of wealth, and different utility curves, time-preference curves, and disutility-curves for each kind of good to each individual. (2) The scheme must assume smooth curves and infinitesimal increments in consumption, which is a fiction so far as the individual psychology is concerned. Without this assumption, the point-for-point correspondence between individual and market ratios does not exist. It is only in social-value curves, or in demand-curves in the big market (which are social-value curves, expressed in money),[1] that you have, as a matter of fact, the right to smooth out your curves. (3) The theory must assume the frictionless static state, in which marginal adjustments are perfectly accomplished, and equilibrium really reached. Without this assumption, again the point-for-point inverse correspondence of market ratios and individual ratios fails. But this makes it quite impossible to apply the doctrine to any functional theory of the value of money, or to bring money in any realistic way into the scheme. As will be shown more fully in later chapters, money functions in

[1] *Supra*, chs. on "Value" and "Supply and Demand."

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bringing about just the absence of friction which static theory assumes. That is what money is *for*. The functional theory of money, therefore, cannot abstract from friction and dynamic change.[1] It is, of course, possible, on this scheme to pick out any one of the goods in the system, say the 1–10000th part of a horse, call it the "money-unit," and determine a set of money-prices. These "money-prices" are already given in the scheme in the ratios between the abstract numbers of this unit and the abstract numbers of the units of all other goods. But this is meaningless, so far as a theory of money is concerned. It abstracts entirely from the *differences* in *salability*[2] of goods, on which the theory of money must rest. It gives us no clue to that part of the value of the money-article which comes from its money-functions.

(4) The theory has no bearing on the problems of supply and demand. Demand-curves are curves, not of utility, but of money-prices. They are concerned, not with a *system* of ratios among goods in general, but with the absolute money-prices of particular goods, one at a time. The modern demand-curves and supply-curves, representing the demand and supply doctrine first made precise by J. S. Mill,[3] are concerned with the money-prices of particular goods, and the "equation of supply and demand"—amount supplied and amount demanded—gives an equilibrium in which only one price is determined. Austrian theory, in Böhm-Bawerk's hands, and in the hands of practically all adherents of the Austrian School, including Davenport,[4] has been offered as really bearing on the explanation of demand, and as giving a psychological account and explanation of the demand-curve. The scheme of Schumpeter

[1] See, *infra*, the chapters on "Volume of Money and Volume of Trade," and "The Functions of Money."

[2] *Infra*, chs. on "Origin of Money," "Functions of Money," and "Credit."

[3] *Supra*, ch. on "Supply and Demand."

[4] See note at the end of this chapter.

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has simply no bearing at all on this vital point. The equilibrium picture in which *all* goods are involved supplies no data from which to construct any of the magnitudes above or below the margin of the demand and supply-curves of any given good. One reason why this is so will appear from the point made with reference to "money-prices" in the preceding paragraph. For Schumpeter's scheme, the significance of the article chosen as "money" would be as much a problem as anything else, when the conditions are laid down. It would vary in the process of reaching the equilibrium. Its ratios with all other things would, thus, fluctuate until the equilibrium was reached. But, as we have seen, in the chapter on "Supply and Demand," curves of supply and demand must assume a fixed significance of the money-unit. It may be further noticed, as marking off Schumpeter's scheme from supply and demand analysis, that in Schumpeter's scheme, the individual is the centre of interest, and his reactions *toward all kinds of goods* is emphasized; whereas in supply and demand analysis, the *good*—one good—is the centre of interest, and the price-offers streaming toward it from all kinds of individuals is emphasized. The two bodies of doctrine are quite distinct.

(5) The theory has no bearing on the explanation of entrepreneur cost—money-outlay, "opportunity cost," alternative positive values, or what not. It finds no place for the modern cost doctrine. It does not in any way open the path to the Austrian theory of costs. Costs, for Austrian theory, as, in general, for modern theory, are reflections of *demand* for the employment of the agents of production in alternative uses. Thus, it costs a great deal to raise wheat in Illinois, because of the rival demand for the land to produce corn. Labor costs are high in ordinary manufacturing, because of the rival demand for labor in the munitions factories, etc. As Schumpeter's theory can

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give no account of the *demand* for labor in the munitions factories, it follows that it can give no account of the *cost* of labor in the other factories. Instead, indeed, of giving us the modern cost doctrine, we see Schumpeter's scheme reviving the old *real cost* doctrine, running in terms of sacrifices in production.[1]

(6) The foregoing paragraph gives emphasis to the point with which we started, namely, that Schumpeter's theory is not a *causal* theory, but merely a theory which gives mathematical relations in a static picture. For the general theory of the Austrians, this real cost doctrine is anathema. Values are positive. The emphasis is put on positive wants, as *causes* which guide and motivate industry. The *clue* to all values is in the values of *consumption* goods, which are in direct contact with the utilities which are the source of value. From the values of consumption goods, we *derive* the values of production goods, labor, etc., which are goods of "second, third and fourth *ranks*," and whose values are merely reflected from the causal marginal utilities of the consumption goods they are destined to create. None of this causation is brought into Schumpeter's conspectus picture. On the contrary, with the bringing in of disutility of production, we have the doctrine of the earlier English School revived. The equilibrium picture is as good a proof of the one theory as of the other. If we assume the utility-curves constant, and allow the cost-curves to vary, then causation would be initiated by the cost-curves.[2]

(7) Such an equilibrium picture leaves untouched the

[1] *Supra*, chapter on "Cost of Production."

[2] That this is wholly alien to Böhm-Bawerk's thought is sufficiently indicated by Böhm-Bawerk's vigorous criticism of Professor J. B. Clark, in "The Ultimate Standard of Value," *Annals of the American Academy*, vol. v, pp. 149–209. It may be noticed that Schumpeter makes use of Menger's and Böhm-Bawerk's general doctrine of imputation of the value of goods of the first order to goods of higher orders, without seeing that his equilibrium picture gives no basis for such a procedure.

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vital question which any theory must answer which means to be of practical use in concrete situations: what are the real *variables* in the situation, and what factors are constant? What causes are *likely* to produce changes in market prices? The individual-utility curves, which in Austrian theory are commonly treated as the only variables, except quantities of goods,—in the strict static picture there are no variables at all!—are really, when conceived of as individual, as growing out of the mental processes of each individual separately, the most *constant* factor in the situation. For, on the principle of the inertia of large numbers, each unit of which is moved by its own peculiar causes, changes in the utility-curves of one man will be offset by opposite changes in the utility-curves of another, and so the general system will remain much where it was. Of course, if a rich man changes his curve, a poor man's change will not offset it in the market, but this is to emphasize the *distribution of wealth* rather than the utility-curves. It is only when you get changes of a sort that the individualistic psychology, and the "pure economic" explanation factors, of the Austrians find no place for, that you can predict a change in the general price-system. It is only changes in fashion or mode, in general business confidence,[1] in moral attitude toward this or the other sort of consumption or production, in the distribution of wealth, changes in taxes and other laws—causes of a general social character—that you can count on to produce important changes in values. Of course, changes in the adequacies of supplies would be taken account of on either interpretation.

(8) The scheme under consideration gives no value concept which the economist can make any particular use of. It gives only ratios between marginal utilities in the mind

[1] *Cf.* comments on Professor R. B. Perry's view, in the long note at the end of this chapter.

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of the same individual, and abstract market ratios. It gives no *quantitative* value, which can be attributed to goods as a quality,[1] a homogeneous quality of wealth by means of which diverse sorts of wealth may be compared, funded, etc. Such a concept is, however, necessary for the economic analysis, and Schumpeter is driven to creating substitutes for it of various sorts, notably *Kaufkraft* and *Kapital*. *Kaufkraft*, as Schumpeter uses the term, is not derived from marginal utility, but is an abstraction from the idea of money. It is not a quantity of money alone, nor even of money and credit, but is a fund of "abstract power," which depends not alone on the quantity of money and credit in which it is embodied, but also on the prices of goods.[2] This *Kaufkraft* is needed to give the causal "steam," the "motivating power," which the social value concept connotes, but which ratios in the market lack. Similarly, *Kapital* is conceived of as an agent, a dynamic force, distinguished from accumulations of concrete productive instruments, by means of which the entrepreneur gets control of land, labor and instrumental goods.[3] Other functions of the quantitative value are shouldered on a hard-worked and unusually defined concept, *Kredit*, which leads Schumpeter into certain "heresies"[4] regarding credit, which are mostly harmless in themselves, but which will arouse misunderstanding and opposition. "*Præter necessitatem entia non multiplicanda sunt*," and the social value concept, which covers by inclusion the

[1] *Cf.* Böhm-Bawerk, *Grundzüge*, etc. (*loc. cit.*), pp. 5, 478, n.; *Social Value*, chs. 2 and 11; J. M. Clark and B. M. Anderson, Jr., in *Quarterly Journal of Economics*, 1915—"The Concept of Value." I may add that this equilibrium scheme is, in my judgment, equally useless as the basis of a hedonistic theory of *welfare*, since it is *absolute* amounts of utility that are significant there.

[2] *Theorie der wirtschaftlichen Entwicklung*, pp. 83–84.

[3] *Loc. cit.*, ch. 3, part ii.

[4] *Ibid.*, p. 199.

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notion of market ratio—market ratios being ratios between social values—and which does all the work that Schumpeter attributes to *Kapital* and *Kaufkraft*, and most of the new work which he attributes to *Kredit*, is to be preferred,[1] if only on grounds of intellectual economy. "Capital" is then saved for more usual meanings, and economy in terminology is also effected. Schumpeter also departs, as shown, from the abstract market ratio notion in erecting a causal theory of value, in which "marginal utility" is used as the equivalent of a quantitative value, and is traced by the Austrian imputation process back to the original factors of production. He even speaks of labor as having "utility," whereas labor,[2] unless used in domestic service, has, not utility, but only value.

In the marginal utility scheme above outlined there is no place for money, on the assumptions laid down. It is a scheme of barter relations. The utilities which come into equilibrium are not subjective-exchange-values, which, as Schumpeter, with Wieser, contends, are the only subjective values money has, but are real subjective use values—marginal utilities. The scheme, assuming as it does, perfect exchangeability of all goods, with infinitesimal increments in consumption, has no place for money. There really is no money service to be performed. Schumpeter, indeed, speaks of money as a mere "Schleier," which does not touch the essence of the phenomena, and such it is on his assumptions. In a similar situation, Professor Irving Fisher gives up the effort to find a psychological explanation of the value of money,[3] and offers the quantity theory

[1] For the assimilation of credit phenomena to the general phenomena of value, by means of the social value doctrine, see *infra* our section on "Credit." The social value doctrine is still further generalized in the chapter on "The Reconciliation of Statics and Dynamics."

[2] *Ibid.*, p. 169.

[3] *Vide Mathematical Investigations*, *loc. cit.*, p. 62, where Fisher assumes

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as a mechanical principle, additional to the psychological barter scheme. Schumpeter, however, does lip service still to the need for a psychological explanation. His answer runs in Wieser's terms—indeed, he attributes it to Wieser. The *Preis* of money [1]—Schumpeter does not use Wieser's absolute value concept, but lets his value of money run in purely relative terms—the price of money in goods depends on the subjective value of money. This subjective value of money rests on the experience of each individual in making purchases—rests on the prices of consumption goods, determined by the relation between real income and money income. The circle is as clear as day.

Ludwig von Mises sees this circle, and tries to avoid it. In von Mises there seem to me to be very noteworthy clarity and power. His *Theorie des Geldes und der Umlaufsmittel* is an exceptionally excellent book. Von Mises has a very wide knowledge of the literature of the theory of money. He has a keen insight into the difficulties involved. He recognizes fully that, so far, the utility school has failed to solve the problem (119–120). His theory is as follows: Individual valuations (93) constitute the basis of the objective exchange value of money. But while for other goods, subjective use-value and subjective exchange-value are different concepts, for money the two coincide, and both rest on the objective value of money (94). This seems to be our old circle in unmistakable form, but Mises thinks he has an escape, as will later appear. No function of money is thinkable which does not rest on its objective exchange value. The subjective value of money rests on the subjective use-values of the goods for which it can be

one price to be unity, "to determine a standard of value." *Purchasing Power of Money*, pp. 174–175.

[1] *Loc. cit.*, pp. 72 *et seq.*

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exchanged (95). Money, at the beginning of its money-functioning, must have objective exchange value from other causes than its money-function, but it can remain valuable, even though these causes fall away, exclusively through its function as general instrument of exchange (111). He gives no argument in support of this contention, but refers with approval to Wieser (*loc. cit.*), and to Simmel (*Philosophie des Geldes*, 115ff.). Hence, the important consequence that in the value of money of to-day a historical component is contained. Herein is to be found a fundamental contrast between the value of money and the values of other goods (119–120.) The individual valuation of money rests on the objective exchange value of money of *yesterday*. This individual value of money is the explanation, on the money side, of the objective value of money of to-day. Going back, step by step, you come ultimately to the subjective use-value of the money-stuff in its non-monetary employment—a temporal *regressus*. This opens the way to a theory of the value of money based on marginal utility. This avoids the circle of explaining the objective value of money of to-day by the subjective exchange value of money of to-day, which in turn rests on the contemporary objective value of money.

I find this particularly interesting, since it employs a device which had once suggested itself to me as a means of escape from the Austrian circle, but which reflection led me to abandon. I have discussed the whole matter in my *Social Value*, and therefore venture a quotation from that book.[1]

"How are we to get out of our circle:[2] The value of a good, A, depends, in part, upon the value embodied in the goods, B, C, and D, possessed by the persons for whom good A

[1] Pp. 132–136.

[2] See *Social Value*, chs. vi and vii.

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has 'utility,' and whose 'effective demand' is a *sine qua non* of A's value? The most convenient point of departure seems to be the simple situation which Wieser has assumed in his *Natural Value*.[1] Here the 'artificial' complications due to private property and to the difference between rich and poor are gone, and only 'marginal utility' is left as a regulator of values. But what about value in a situation where there are differences in 'purchasing power'? How assimilate the one situation to the other?

"A *temporal regressus*, back to the first piece of wealth, which, we might assume, depended for its value solely upon the facts of utility and scarcity, and the existence of which furnished the first 'purchasing power' that upset the order of 'natural value,' might be interesting, but certainly would not be convincing. In the first place, there is no unbroken sequence of uninterrupted economic causation from that far away hypothetical day to the present, in the course of which that original quantity of value has exerted its influence. The present situation does not differ from Wieser's situation simply in the fact that some, more provident than others, have saved where others have consumed, have been industrious where others have been idle, and so have accumulated a surplus of value, which, used to back their desires, makes the wants of the industrious and provident count for more than the wants of others. And even if these were the only differences, it is to be noted that private property has somehow crept in in the interval, for Wieser's was a communistic society. And further, an emotion felt ten thousand years ago could scarcely have any very direct or certain quantitative connection with value in the market to-day. Even if there had been no 'disturbing factors' of a non-economic sort, the process of 'economic causation' could not have car-

[1] Bk. ii, ch. vi.

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ried a value so far. It is the living emotion that counts! Values depend every moment upon the force of live minds, and need to be constantly renewed. And there would have been, of course, many 'non-economic' disturbances, wars and robberies, frauds and benevolences, political and religious changes—a host of historical occurrences affecting the weight of different elements in society in a way that, by historical methods, it is impossible to treat quantitatively.[1]

"What is called for is, not a temporal *regressus*, which, starting with an hypothesis, picks up abstractions by the way, and tries to synthesize them into a concrete reality of to-day, but rather, a *logical analysis* of existing psychic forces, which shall abstract from the concrete social situation the phases that are most significant. This method will not give us the whole story either. Value will not be

[1] "*Cf.* Davenport, *Value and Distribution*, 560. 'For, in truth, not merely the distribution of the landed and other instrumental, income-commanding wealth in society, but also the distribution of general purchasing power . . . are, at any moment in society, to be explained only by appeal to a *long and complex history* [italics mine], a distribution resting, no doubt, in part upon technological value productivity, past or present, but in part also tracing back to bad institutions of property rights and inheritance, to bad taxation, to class privileges, to stock-exchange manipulation . . . and, as well, to every sort of vested right in iniquity. . . . *But there being no apparent method of bringing this class of facts within the orderly sequences of economic law, we shall—perhaps—do well to dismiss them from our discussion.* . . .' [Italics are mine.] It may be questioned if the 'orderly sequence' is worth very much if it ignore facts so decisive as these! It is precisely this sort of abstractionism which has vitiated so much of value theory. Most economists slur over the omissions; Professor Davenport, seeing clearly and speaking frankly, makes the extent of the abstraction clear. We venture to suggest that the reason he can find no place for facts like these within the orderly sequence of his economic theory is that he lacks an adequate sociological theory at the basis of his economic theory. A historical *regressus* will not, of course, fit in in any logical manner with a synthetic theory which tries to construct an existing situation out of existing elements. Our plan of a *logical* analysis of existing psychic forces makes it possible to treat these facts which have come to us from the past, not as facts of different nature from the 'utilities' with which the value theorists have dealt, but rather as fluid psychic forces, of the same nature, and in the same system, as those 'utilities.'"

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completely explained by the phases we pick out. But then, we shall be aware of the fact, and we shall know that the other phases are there, ready to be picked out as they are needed for further refinement of the theory, as new problems call for further refinement. And, indeed, we shall include them in our theory, under a lump name, namely, the rest of the 'presuppositions' of value.

"Our reason for choosing a logical analysis of existing psychic forces instead of a temporal *regressus*—instead, even, of an accurate historical study of the past—is a twofold one: first, we wish to coördinate the new factors we are to emphasize with factors already recognized, and to emerge with a value concept which shall serve the economists in the accustomed way—it is illogical to mix a logical analysis with a temporal *regressus*. But, more fundamental than this logical point, is this: the forces which have historically *begot* a social situation are not, necessarily, the forces which *sustain* it. The rule doubtless is that new institutions have to win their way against an opposition which grows simply out of the fact that we are, through mental inertia, wedded to what is old and familiar. We resist the new *as* the new. Even those who are most disposed to innovate are still conservative, with reference to propaganda that they themselves are not concerned with. The great mass of activities of all men, even the most progressive, are rooted in habit, and resist change. When, however, a new value has won its way, has become familiar and established, the very forces which once opposed it now become its surest support. Or, waiving this unreflecting inertia of society, as things become actualized they are seen in new relations. What, prior to experiment, we thought might harm us, we find beneficial after it has been tried, and so support it—or the reverse may be true. The psychic forces maintaining and controlling a social situa-

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tion, therefore, are not necessarily the ones which historically brought it into being." [1]

Since the foregoing was written, I have found that another theorist, Professor Alvin S. Johnson, had also given consideration to the same idea, as a means of escape from the Austrian circle. Professor Johnson refers to the notion briefly in his review of *Social Value* (*Am. Econ. Rev.*, June, 1912, p. 322), holding that the doctrine is logically tenable, though rejecting it on psychological grounds. "The value of a thing newly created can be explained only with reference to values antecedently existing." That there is a continuity in the value system, as in the whole social-mental life of men, I should be the last to deny. But it is not the antecedently existing values, *as* antecedently existing, that give value to the new piece of wealth. The antecedent values function only as *persisting*, as *contemporary* social forces. We do not find the motivating power of existing values in the ashes of burnt out desire! It seems to me very essential to distinguish the two methods of approach to the problem. It is possible to state a historical sequence—if you know it,—showing how values have historically come and gone. But for an equilibrium picture, of the sort that our price theory demands, where there is a mechanical balancing of contemporary factors (as in Marshall's balls in the bowl illustration), such an account is of no use. Existing social forces have their history. But, at a given moment, they are what they are, and what they *were* at a different time adds no ounce of weight to the power they now exert. If a quantitative account of value is called for—and price-theory is essentially concerned with the measurement of values—we must bring measure and measured into con-

[1] Of course, we do not mean to question the immense light which history throws upon the nature of existing social forces.

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temporary balance. The historical account is one thing; the cross-section analysis is another. "Static theory" is a mechanical abstraction from the organic cross-section picture, which, by making it superficial, is able to make it exact.

It seems to me that this distinction must be kept clear if progress in the science is to be made. At every point, divergent conclusions are reached if the two view-points are merged. The distinction between statics and dynamics is, in a general way, the same as the distinction here made between the historical and the cross-section view. It is no answer to the Ricardian theory of land-rent for Carey to point out that historically, in new countries, the uplands are cultivated first, and the more fertile river-valleys later. Ricardo is talking about statics, and Carey about dynamics. Carey does not answer Ricardo, because he is talking about a different problem. The utility theorist especially has no right to leave the static view-point. All the elementary laws on which the utility theory is based are static laws. The law of satiety, of diminishing utility, is a static law, and the utility theorists are careful to point out that it holds only for an individual at a given time. It rests on nerve fatigue. Give the nerve time to rest, and utility does not sink. On the contrary, the dynamic law of wants is that wants expand. As old wants are satisfied, new wants arise, so that, in the course of time, *marginal* utilities do not sink—the competition of new wants forces up the margins of the old wants. Moreover, with time, tastes change, habits are formed, and the same wants may grow more intense—as in the case of olives or whiskey. All this has been seen by the creators of the utility theory. Thus, Wieser: "The want as a whole of course retains its strength so long as a man retains his health; satisfaction does not weaken but rather stimulates it, by constantly

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contributing to its development, and, particularly, by giving rise to a desire for variety. It is otherwise with the separate sensations of the want. These are narrowly limited both in point of time and in point of matter. Anyone who has just taken a certain quantity of food of a certain kind will not immediately have the same strength of desire for a similar quantity. Within any single period of want every additional act of satisfaction will be estimated less highly than a preceding one obtained from a quantity of goods equal in kind and amount." (*Natural Value*, p. 9.) A similar statement is in Taussig's *Principles* (I, 124), "In such cases, however, the tastes of the purchasers may be said to have changed in the interval. At any given stage of taste and popularity, the principle of diminishing utility will apply." Illustrations could be multiplied.

It is true that *future* marginal utilities come into the utility theory scheme, but they come in, not *as* future utilities, but as "*present worths*" of future utilities, or as "present anticipated feelings" in Jevons' phrase [1] suffering a discount, usually, in the process. But I am not aware of any writer among the founders of the utility school, who has sought to bring past utilities into the scheme. The past is dead. Its effects persist in the present only in present processes. A *memory* is a *present* psychological fact.

Consider further. Is it the prices of yesterday that determine the subjective value of money to an individual, if the prices of yesterday are different from the prices of to-day, *and the individual knows it?* In so far as we have the clear, intelligent economic mind, seeking its interests—and the marginal utility theory assumes this type of mind—the tendency is to bring all the factors in the problem into

[1] *Theory of Political Economy*, 4th ed., p. 34.

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the present. If prices change slowly, so that the individual can count on essentially the same situation to-day that he had yesterday, doubtless he will not take the trouble to recast his value system. There is a tremendous lot of trouble in bringing about, in the individual's mind, the rational equilibration of values—trouble which the Austrian theory commonly abstracts from, but which should be recognized in the analysis, and accorded its own marginal significance in the scale. To throw the emphasis on inertia, however, and to assume that men do not readjust their margins to meet changed conditions, is to depart from the fundamentals of the Austrian theory. If the price-situation is a rapidly changing one, men do rapidly readjust their estimates of money. If money is fluctuating rapidly in value—as, say, during a time when there is depreciated paper money, whose future depends on military events, the adjustments may be very rapid indeed. I quote the following from the news columns of the *New York Times*, of April 4, 1914, p. 2: "Jaurez, Mexico, Apr. 3.—After the hysterical outbursts last night that greeted the news of the fall of Torreon, this city was preternaturally calm to-day. . . . The silent gentleman with the dyed mustache who spins the marble at the roulette wheel in the Jaurez Monte Carlo, conducted by Villa's officers for the benefit of the rebel treasury, seemed the only person who was not excited. When the crowd of players suddenly deserted him on the sound of the bugle call of victory, he gave the marble another whirl from sheer force of habit, but none returned. . . . In an hour, however, play was faster and more furious than ever, for holders of Constitutionalist money early realized that their currency had suddenly increased in value, and that they were somewhat richer than before." I do not question the fact, however, that men are slow in making calculations, and that society

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is often unconscious of changed conditions, and often readjusts less rapidly than occasion requires. There is a vast deal of inertia, of blind habit, of custom, etc. But emphasis on these factors is not marginal utility theory! Factors like these are emphasized by a functional psychology, and by a social psychology—not by an individualistic psychology which rests on the assumption of rational calculation. It is not *past* utilities that explain present subjective values of money when these subjective values are out of harmony with the present market facts, but rather *present* habits, present customs, present disinclination to readjust, etc. There is a big difference, psychologically, between the mental processes through which one arrived at one's present state of mind, and the present state of mind itself. The original "commodity utility" of the money metal, in the far away time before the money use affected its value, is surely no longer a factor. Certainly not on the basis of an individualistic psychology of the Austrian type. All the individuals who experienced that original utility are long since dead! Not even memories of the original utilities persist.

When writing the passage in *Social Value*, quoted above, I did not suppose that I was dealing with a notion that anyone else would ever take seriously. My purpose in discussing it was chiefly to throw into sharp relief the contrast between the historical and the cross-section viewpoints, and to make clear that my own theory was based on analysis of existing psychological forces. Since finding, however, that two writers for whose views I have so much respect have independently developed the same idea, and have taken it seriously, I have felt it worth while to give it this extended consideration.

Von Mises, like Wieser, needs an absolute value of money in his thinking. He does not call the concept by that

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name, but, following Menger[1] speaks of the "inner objective value of money" and the "outer objective value of money." (Mises, p. 132.) The latter is the purchasing power of money, a relative concept, exactly expressed in the price-level. The inner objective value of money is designed to cover the causes of changes in prices which originate on the money-side of the price relation alone.[2] This inner objective value of money performs the same logical function in the theory of money that the absolute social value concept of the present writer does, even though the psychological explanation lying behind it is very different.

Von Mises considers the quantity theory at length, noting a number of defects in it, chief of which is the fact that it has no psychological theory of value behind it, that it does not account for the *existence* of the value of money, and at most gives a law for *changes* in a value whose existence is taken for granted. The details of this criticism, however, need not be here presented. The quantity theory is to be treated in detail at a later point of our study.

The writer who has most definitely stated the relation of utility to the functions of money, is David Kinley (*Money*, ch. viii). He would explain the value of money, by (a) its utility as a commodity, and (b) its utility in the money-employment, the employments reaching a marginal equilibrium. The utility of the money metal in its commodity use calls for no analysis. But what is meant by the utility of money as money? Where the writers so far discussed have denied that money as money has any utility, Dean Kinley finds a utility in the money-function itself: money facilitates exchange, and exchange, by transferring goods from those who do not need them to those who do need

[1] Art. "Geld," in *Handwörterbuch der Staatswissenschaften*.

[2] *Cf.* Helfferich, *Das Geld*, Leipzig, 1903, for the same terminology, pp. 485–486.

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them, increases the utility of those goods. Money, as money, thus produces utility.[1] The utility of money is the extra utility which comes into being by virtue of its use, as compared with what would exist in a state of barter. The marginal utility of money is the utility of money in the marginal exchange—the exchange which would be effected by means of barter if money were any more difficult to procure. The marginal utility of money, then, is not the whole of the marginal utility of the good for which it is exchanged, but rather is the differential part of that utility which is created by means of the use of money in exchange. The marginal utility of money, thus, appears in separate services of money. Money is a durable good, which gives forth its services bit by bit. The value of money is based on these separate services, it is "the capitalized value of the service rendered in the marginal exchange."

This conception is, it seems to me, much truer to the spirit of the general marginal utility theory than the theories of Wieser, Schumpeter, or von Mises. If the utility theory at large were valid, the application here would be valid. To Dean Kinley's conception of a marginal utility of the money service, I offer simply the objections which I offer to the utility theory at large—objections indicated in what has gone before, and in my *Social Value*. The application of the capitalization theory to the value of money I have already discussed in a previous chapter, and shall again consider in the chapter on "The Functions of Money."

I conclude that the marginal utility theory has not solved the problem of the value of money. The reason,

[1] Exchange creates *values*. It does not necessarily create *utilities*. Wheat going from a famine-stricken part of India to a place where it will sell for higher prices does not gain in utility thereby.

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however, is simply that it has not solved the general problem of value. The marginal utility theory, in so far as it seeks to make marginal utility the *cause* of value, is circular. The effect of a given man's wants upon the value of the goods he wants depends, not on the marginal intensity of those wants alone—a penniless prisoner may desire a marble palace ever so intensely without affecting its value—but also upon the value of the wealth possessed by the individual who experiences the wants. But this is to explain value, not by marginal utility alone, but by value as well—a circle. Or, if we leave the standpoint of absolute values, and look at the matter in terms of prices, the same situation presents itself. The price which an individual is willing to pay for a good depends on his income,—which commonly rests on prices—and on the prices he has to pay for other goods which enter into his budget. His price-offer, expressive of the marginal utility of a horse to him, is made with consideration of the price of a buggy, of harness, of feed, of the wages of the servant who cares for the horse, the price of a barn, and of the other things that the possession of the horse involves. And not these alone: less immediately, but still vitally, his whole budget enters. Higher prices for theatre tickets or for food or for clothing will reduce his price-offer for a horse. Further, his price-offer for the horse will be tremendously influenced by his opinion as to the permanent market price of horses. He will not be willing to pay a price for the horse which he cannot expect to get back if he should decide later to sell the horse. The direct influence of market price on individual demand-price is very great indeed. Marginal utility (subjective use-value) very frequently gives place to subjective value-in-exchange in the determination of an individual's marginal demand-price—which means that the market controls the individual instead of the individual

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controlling the market. With sellers, it is *generally* subjective-exchange-value, rather than marginal utility, that determines supply-price-offer. The sellers, in so far as they are producers, have little need for the great mass of their stocks. They will sell them, rather than keep them, at almost any price. The reason they ask high prices is simply that they think the market will give them the high prices. The individual price-offers, in the aggregate therefore, presuppose the whole market situation—presuppose a general value and price system already fixed and determined. Each individual price offer presupposes many other prices, though not, of course, the whole market. Since, then, much of the market situation is assumed in the determination of each particular price, by the Austrian method, it is obviously circular reasoning to think that the determination of each price separately by this method will supply data for a summary of the market situation as a whole. In the one form in which the utility theory avoids a circle,—that presented by Schumpeter, and discussed in an earlier part of this chapter—it is not a causal theory. Marginal utility is not a cause of market prices, but rather, marginal utilities and market prices are alike resultants, effects, of more fundamental factors. No writer [1] who

[1] A possible exception to this general statement might be made for Professor H. J. Davenport, who would insist that his version of the utility theory is based on "relative marginal utility," rather than on marginal utility in Böhm-Bawerk's fashion. No critic has been more merciless than he in the criticism of the Austrian confusions of demand-curves with utility-curves, etc. But it is not clear to me that Professor Davenport has freed himself from the general doctrine that he criticises. I am not sure that he would accept Schumpeter's version of the Austrian theory as correct. It may be possible to *read* Schumpeter's doctrine *into* chapter 7 of Davenport's admirable *Economics of Enterprise*, but it is not clear that one could read it *in* the chapter! That individual price-offer depends on the marginal utilities

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has presented the utility theory in this form has tried to apply it to the value of money, and even if it could be so applied, it would not give a causal explanation of the value of money in terms of marginal utility. In most of the

of alternative goods, in comparison with the marginal utility of the good in question, Davenport does emphasize. But the complication that not merely the utilities of alternative goods, but also their *prices*, have to be taken into account, and that this involves circular reasoning when an effort is made to give a summary of the whole system of prices by means of individual utility calculations, he does not, so far as I can see, grapple with. He summarizes the thing on p. 104: "The steps, then, are from (1) utility to (2) marginal utility, thence to (3) the comparison of marginal utilities, and finally to (4) price-offer." He takes no account here of the complication that the third step is in large degree a comparison, not of marginal utilities proper, but rather, of "subjective values in exchange." Yet just in this lies a vital difficulty of utility theory, in so far as it attempts to explain causation. Moreover, Professor Davenport is seeking to explain the *causal* relation of utility to *demand*, the old Austrian problem. The explanation of demand is, indeed, the problem with which all theories of value must come to terms, if they are to be of any use. As we have seen, Schumpeter's schema has no bearing whatever on the explanation of demand, or on *causation* of any sort. Schumpeter's scheme leaves money out, and demand-curves run in money terms. Davenport's scheme assumes money—and "purchasing power." (*Loc. cit.*, 91.) We have seen in the chapter on "Supply and Demand" that the notion of demand and supply involves money and a fixed absolute value of money. Professor Davenport is thus doubly assuming value, the thing to be explained! Laws of "relative marginal utility" developed on the assumption of money, and in abstraction from changes in the value of money, are not likely to be of service when the problem of the value of money itself is taken up. On pp. 95–96, Davenport comes closest to Schumpeter's doctrine, saying that "the total situation is directive of each individual in it," and that there are "mutual reactions," such that particular facts are both effects and causes, illustrated by the last person who jumps on a crowded raft—does he sink the others, or do they sink him? This recognizes the complexity of the problem, but it is not clear that it even purports to do more than that. What is called for is a *definition* of the essential

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efforts to apply the utility theory to money, the circle becomes so obvious that one marvels that able theorists should for a moment fail to see it.

elements in that "total situation," with precise statement as to what is assumed constant and what is allowed to vary, and an analysis of the "mutual reactions," with a starting point and a *terminus ad quem*,—an equilibrium in which "mutual reactions" cease to trouble with their endless circle! Schumpeter's schema, though meeting criticism on other scores, does meet this logical test, but Davenport's does not appear to do so.

It is interesting to note that Professor Alvin S. Johnson, in his review of the *Economics of Enterprise*, concludes that Professor Davenport, instead of meaning by "relative marginal utility" anything of the sort that Schumpeter has in mind in his equilibrium picture of all utilities to all individuals, really has an absolute value in mind. (*Quarterly Journal of Economics*, May, 1914, pp. 433–436.) There is much in Professor Davenport's book to justify this interpretation.

Professor Davenport's application of "utility" to the problem of the value of money will be found on pp. 267–275 of the *Economics of Enterprise*. The general discussion of money and credit in the *Economics of Enterprise* has been exceedingly illuminating to me, and my indebtedness to it will appear in the present book.

Much of what has been said of Davenport's "relative utility" theory may also be said of Wicksteed's. (*Common Sense of Political Economy*, London, 1910.) This is in many ways a remarkable book, characterized by excellencies of many different sorts. But it fails to present the utility theory in such a way as to avoid circular reasoning. Wicksteed sees the confusion of utility-curves with demand-curves, and protests vigorously and at length against it. (*E. g.*, pp. 147–150.) He starts out by assuming money and a set of market prices. His earlier chapters are given to showing how the individual adjusts himself to the market, bringing his "marginal utilities" of various goods into harmony with the market prices. He recognizes that he has made these assumptions (pp. 130–131), and that he cannot use the results thus achieved as an explanation of the market prices. They are "our goal, not our starting point." But by pp. 161–162 he finds himself with the "suspicion" that nothing special or peculiar is to be found in the laws of "market or current prices—a phenomenon which it is obviously impossible to regard as ultimate, which

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demands explanation, and which we have not yet explained. . . . Much remains to be done, but we can already see that the preferences of each individual help to determine the terms or conditions under which the choice of other members of the community must be exercised. If you take the individuals of the community two and two it is clear that the marginal preferences of each determine the limits within which direct exchanges with the other can be entertained, and we must already have at least a presentiment that the collective scale is the register of the final and precise 'resultant' of all these mutually determining conditions and forces."

This seems to forecast Schumpeter's doctrine, but in the development which follows, we do not find it. The heart of his analysis of the causation of prices is in ch. vi, on "Markets." The "summary" which precedes that chapter again suggests Schumpeter's analysis—the notion of an all-embracing equilibrium. But when we get into the detailed analyses of the chapter we find nothing more than an exceedingly good account of the process by which supply and demand of particular goods, considered separately, become equated, through two-sided competition, and under conditions of monopoly. Instead of "relative marginal utilities," we see customers coming into the market with various money-prices in mind, and sellers trying out various money-prices—not marginal utilities, nor yet two or more marginal utilities in comparison with one another, but rather, money-prices, which, in the minds of the buyers may be supposed to represent "subjective values in exchange," based on both marginal utilities *and* objective prices of other things that enter into the budget, and which, in the minds of sellers, represent estimates of the prices which buyers may be induced to pay. Wicksteed does not transcend the circle. Finally, despite his caution to avoid the more glaring forms of the circle, and the confounding of demand-curves with utility-curves, and of utility with value, he does lapse into it in its completest form in expounding the Austrian doctrine of cost of production. "The only sense, then, in which cost of production can affect the value of one thing is the sense in which it is itself the value of another thing. Thus what has been variously termed utility, ophelemity, or desiredness, is the sole and ultimate determinant of all exchange values." (P. 391.) Here is the illicit leap from marginal demand price to marginal utility which all utility theorists make, sooner or later! It is true that costs in one place are reflections of *demand* elsewhere. But it is not true that costs in one place

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have any definite quantitative relation to *utilities* in another place!

When Wicksteed comes to discuss the value of money, he makes slight use of the notion of abstract ratios among relative utilities, and employs a concept which he has nowhere vindicated or explained: the *value* of money, as distinct from the reciprocal of the price-level, treating the value of money as something which can be directly influenced by sinister rumors affecting the credit of the Government, and which can be an independent cause affecting velocity of circulation, and the amount of trade done by means of money. *Loc. cit.*, p. 623. See *infra*, our chapter on "Velocity of Circulation."

The only writers I know at first hand who have really thought the thing through, and avoided the circle in form, are Schumpeter and Irving Fisher. (*Mathematical Investigations in the Theory of Value and Prices, Trans. Conn. Acad. of Arts and Sciences*, 1892. See bibliographical note, *supra*, in this chapter.) I have given an exposition of Schumpeter, rather than Fisher, because the former has put the doctrine in non-mathematical form. In the text I have indicated the limitations of their doctrine. Fisher definitely avows the impossibility of applying the doctrine to the problem of the value of money. *Purchasing Power of Money*, p. 174. Schumpeter doesn't apply it to money, and when he tries to work out a utility doctrine of money, he lapses into the Austrian circle in a very obvious form. In later writings, Fisher also seems to forget the limitations imposed on utility theory in his earlier essay. In his *Elementary Principles*, ed. 1912, Fisher lists (pp. 408–409) a great multitude of factors that might affect the price of pig iron, and then says: "Back of these causes lie other causes, multiplying endlessly as we proceed backward. But if we trace back all these causes to their utmost limits, they will all resolve themselves into changes in the marginal desirability or undesirability of satisfactions and of efforts, respectively, at different points of time, and in the marginal rate of impatience as between any one year and the next." Here these marginal psychic magnitudes, which in the earlier essay appeared merely as surface phenomena, resultants of a total situation, proportional to prices, causes of nothing, merely symptoms of a completed equilibrium, are erected into atomic *veræ causæ*, the ultimate ultimates!

It is interesting to contrast this with a yet more recent statement by a philosopher who has undertaken a defence of the utility theory of economic value, Professor R. B. Perry, in the *Quarterly*

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Journal of Economics, for May, 1916. Considering the contentions of the present writer that many general social causes, in addition to the individual utilities concerned with consumption, are needed to explain changes in the values of goods, such as changes in fashion, mode, in general business confidence, in moral attitude toward different sorts of consumption, in the distribution of wealth, in taxes and other laws, Professor Perry says: "If the Austrian School has neglected this, then it needs to be corrected. But the essential contention of that school remains, so far as I can see, unaltered; *in that these changes work through individuals* and have their *point of application* in a more or less rational *comparison of needs* made by the *individual buyer or seller*. Whatever affects these *individual schedules* on a sufficiently large scale will affect prices. But to ignore the individual channels through which these forces pass, is elliptical." (Pp. 469–470. Italics mine.) Now I call attention to several points in the foregoing. First, I would contrast it with the doctrine quoted from Professor Fisher's *Elementary Principles*. Where Fisher puts the utilities far back in the realm of ultimate causation, making them the source from which spring all the proximate social causes which might affect the price of pig iron (such as "a trade war," "a change in fashion," a "change in incomes," "decreasing foresight," etc., *loc. cit.*, p. 409), Professor Perry would make individual utility schedules the final focal point, toward which converge, and through which pass, all the causal forces, however richly explained by antecedent social factors, which affect prices. The utility theory of value means all things to all men!

But a second point with reference to Professor Perry's doctrine. It is perfectly true that *all* social activities are the work of *individuals*. Society is nothing apart from the individuals who make it up. To think of society and the individual as separate and antithetical is a fallacy which I have criticised in detail in Part III of *Social Value*. The social value theory does not mean that there are social forces which do not run through individual channels. This is not to accept the notion that individuals are really, in their psychical nature, isolated monads, however. There is a functional unity of individual minds, and no individual can be understood in abstraction from society. But this view is as old as Aristotle. I have not contended that prices can change apart from the mental activities of individual men, working upon one another. So far there *may* be no issue with Professor Perry.

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But there is a big issue when he contends that all the causation is focussed in *individual utility schedules*, and in a more or less rational comparison of needs made by the *individual buyer and seller*. This is *demonstrably erroneous*. Let us assume, for example, that utility schedules of every individual New Yorker remain unchanged, but that, through a change in the law (the work of individual men, under the influence of their own individual emotions and ideas, of, say, ethical character), incomes in New York City are *equalized*. Hold rigidly to the assumption that there are no changes in utility schedules. Will there not be, none the less, a radical readjustment of prices? Will not the prices of Riverside palaces and steam yachts sink and the prices of things which the poor esteem rise? The utility-curves of the erstwhile rich, assumed to remain unchanged, no longer count for so much as before in the market. The rich cannot go so far down their curves in the consumption process as before. The poor, or those who had been poorest, now count for more in the market. They can lower their margins. In other words, the forces affecting the distribution of wealth, in so far as they are legal and moral in character, at least, may affect the price-situation, *without* altering *utility schedules*. Some social factors, as changes in mode and fashion, will work *through* the utility schedules, but others will not. One big *variable* affecting prices which need not, in idea, at least, affect utility schedules at all, and whose main influence is anyhow not directed through them, is the volume of business confidence. This factor we shall analyze in our discussion of credit, *infra*. Professor Perry thus escapes only part of the criticism which we have made (*Social Value*, pp. 45 and 56) of the Austrian theory: (1) that it abstracts the individual from his vital contacts with other individuals, and (2) that, within the individual mind thus abstracted, the Austrians make a further abstraction, taking as relevant only the interests concerned with *consumption of economic goods*, summed up in the utility schedules. The second criticism applies to Professor Perry as well. Men's total interests are not summed up in utility schedules, and do not affect prices exclusively *via* utility schedules.

It may be noticed, also, with reference to Professor Perry's discussion that he has misconstrued the Austrian theory in conceiving it as an analysis of an historical *process*, with a beginning and an end, instead of a static picture, in which preëxisting individual factors come into equilibrium. (*Loc. cit.*, 475.) He seeks thus to avoid the Austrian circle, but as we have shown in the dis-

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cussion of von Mises in the text, this way is not open to the Austrians.

Able and penetrating though Professor Perry's discussion is, on the psychological side, it fails, I think, to take adequate account of the complexities with which the economist and sociologist must deal.

In general, I find no version of the utility theory of value which is defensible, and, above all, no effort to apply it to the value of money which has met with success.

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PART II. THE QUANTITY THEORY

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CHAPTER VI

THE QUANTITY THEORY OF PRICES. INTRODUCTION

THE quantity theory, in its usual formulations, is a theory, not of the value of money, in the absolute sense of value, but of the general price-level, the average price of goods exchanged for money. It is not a psychological theory. It does not deal with psychological quantities, or psychological forces. It is a mechanical theory, concerned simply with quantities, and the relations between them. The essence of the quantity theory comes out in the following brief statement: given a number of units of money; given a number of units of goods to be exchanged; assume these two numbers to be independent [1] of each other; assume all the goods to be exchanged for all the money; then the average price will be a simple function of the quantities of goods and of money respectively, such that an increase in the amount of money will increase the average price per unit of goods proportionately, if goods remain unchanged in amount, or an increase in goods will lower the price per unit proportionately, money being assumed to remain unchanged in amount. The qualification is commonly added that if goods have to be exchanged more than once, the effect is the same on prices as if there were an added number of goods equal to the added number of exchanges, and that if money is used more than once in exchanging a given number of goods, the effect is the same as if there were proportionately more money. Both quantity of goods and quantity of money are commonly defined as actual quantity mul-

[1] *Vide* Taussig, *Principles*, I, 432.

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tiplied by "rapidity of circulation." Rapidity of circulation, however, for both money and goods, is commonly thought of as a constant, so that the original formula remains unaffected by the qualification, so far as a prediction as to the effect of increase or decrease of money or goods on prices is concerned. Involved in the quantity theory, and explicitly stated by many writers, is the doctrine that the substance of which money is made is irrelevant, that it is the number, and not the quality or size of the money-units that counts. "In short, the quantity theory asserts that (provided velocity of circulation and volume of trade are unchanged) if we increase the *number* of dollars, whether by renaming coins, or by debasing coins, or by increasing coinage, or by any other means, prices will be increased in the same proportion. It is the number, and not the weight, that is essential. This fact needs great emphasis. It is a fact which differentiates money from all other goods and explains the peculiar manner in which its purchasing power is related to other goods. Sugar, for instance, has a specific desirability dependent on its quantity in pounds. Money has no such quality. The value of sugar depends on its *actual quantity*. If the quantity of sugar is changed from 1,000,000 pounds to 1,000,000 hundredweight, it does not follow that a hundredweight will have the value previously possessed by a pound. But if money in circulation is changed from 1,000,000 units of one weight to 1,000,000 units of another weight, the value of each unit will remain unchanged." (Irving Fisher, *Purchasing Power of Money*, pp. 31–32.) To the same effect is Nicholson's exposition, in which the money is assumed to consist of dodo-bones, the most useless substance that Nicholson could thing of. For the quantity theory, prices are determined by the *numbers* of goods and dollars that are to be exchanged for one another, and not by the *values* of the goods and dollars;

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—indeed, for the quantity theory, "value" commonly has no meaning apart from the prices which are supposed to be adequately explained by the mechanical relations of numbers.

In the critical study which follows, virtually every doctrine and every assumption of this preliminary statement will be challenged. I shall deny, first, that the quantity of goods to be exchanged and the quantity of money to be exchanged for the goods, are independent quantities, maintaining, rather, that an increase in either of them tends normally to be accompanied by an increase in the other. Quantity of goods and quantity of money *exchanged* are not simple physical stocks, given data. Rather, they are consequences of human choices and human relationships, and vary from a large number of highly complex psychological causes, many of which are common to both. I shall deny, second, that "rapidity of circulation," either of goods or of money, is a simple constant, independent of quantity of goods or of quantity of money. I shall maintain, rather, that rapidity of circulation of money is a phenomenon which calls for psychological explanation: that the rapidity of money really means the *activities of men;* that these activities are complex, and obey no simple law; that instead of being an independent factor, constant, in the situation, the rapidity of circulation of money is bound up with the quantity of money, the quantity of goods to be exchanged, the rapidity of circulation of goods, and the prices of the goods, and that the rapidity of circulation of goods is likewise causally dependent on the factors named—or better, on the causes which control them; that rapidity of circulation, whether of money or of goods, is not a causal factor independent of prices, but rather in part depends on prices. In the third place, I deny the doctrine that the question as to *what* the money-unit is made of is irrelevant. On the

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contrary, I shall maintain that the *quality* of money, rather than its quantity, is the determining factor. I shall not maintain that only money made of or redeemable in valuable bullion can circulate, nor shall I maintain that the value of money depends wholly on the value of its bullion content when money is made of valuable metal. I recognize that value can come from other sources. But I shall maintain that value from some source other than the monetary employment is an essential precondition of the monetary employment, even though recognizing that that monetary employment may, in a way later to be analyzed, add to the original value of the money. The doctrine that only physical quantities, or abstract numbers, of goods are relevant I shall challenge especially, maintaining, on the contrary, that the psychological significances, the values, of goods are the really important thing, so that an increase in the number of one sort of goods may have a very different effect on the average of prices from an increase of the same number of units of some other good, and so that an increase in the number of goods exchanged under one set of conditions may have a very different effect on prices—or may be accompanied by a very different movement in prices, for the question of causal relations is a complicated one—from the change in prices that might accompany the same increase in the amount exchanged of same goods under other circumstances. Finally, the doctrine of the quantity theory that the price-level is a passive result of the other factors named: quantities of goods and money, and their respective velocities; that prices cannot initiate a change in the situation, will also be challenged. I shall undertake to show that the first change in the situation may appear in prices themselves, and that the quantities of goods exchanged, and of money, and their velocities, may then be altered to correspond with the change in prices.

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I shall further maintain, as against the whole spirit of the quantity theory, that it does not seize hold of essentials in the causes lying behind prices. I shall contend that the factors with which it deals, instead of being independent *foci* to which converge the causes governing the price-level, and through which causation flows in one direction, are really not true "factors" at all, but rather are blanket names for highly complex and heterogeneous groups of facts concerning which few general statements are possible. Quantity of goods exchanged, for example, may be in some of its parts caused by rising prices, in others of its parts may be causing falling prices and is chiefly caused by *fluctuating* prices. The net change in prices in this case is not the result of any one movement from "quantity of goods" as a whole. Changes in the price-level are not one result, but rather, are the mathematician's average of many changes, due to a host of causes, in many individual prices. The quantity theory is an effort to simplify phenomena highly complex. Of course, the simplification of complex phenomena in thought is a laudable scientific goal, but when the simplification goes so far as to group things only superficially related, and to leave out the really vital elements, it is worthless. Value theory, with all the value left out, is like Hamlet with no actor for the title rôle. Simplification in the explanation of general prices has gone as far as we can legitimately take it when we seek to summarize all the factors involved in the *foci* of, on the one hand, the value of money, and, on the other hand, the values of the particular goods. The general price-level is an average of many concrete prices. Each of these individual prices has a concrete causal explanation. The *general* price-level has, not a few simple causes, but an infinite host of causes. Indeed, the general price-level has no real existence. It is a convenient mathematical concept, by means of which we may

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summarize the multitude of concrete facts. It is useful as a device for measuring changes in the value of money, on the assumption that changes in the values of goods neutralize one another. This assumption is never strictly true, and often is demonstrably false. The general price-level is neither a cause nor a result. Particular prices, in general, are results of two causes, namely, the value of money and the value of the good in question, and particular prices may then become causes, changing the quantity of money involved in a given set of exchanges. Neither quantity of money, nor quantity of goods exchanged, nor rapidity of circulation, nor general price-level is a simple, homogeneous quantity, obeying definite laws.

I shall also undertake to show that in many important cases the quantity theory leads to conclusions regarding the price-level which contradict other laws of prices, notably the capitalization theory, the cost of production doctrine, and the law of supply and demand. I have previously pointed out that these three doctrines are inapplicable to the problem of the value of money itself. On the assumption of a value of money, however,—using value in the absolute sense—they are applicable to the problem of prices, and, since the price-level is merely an average of particular prices, they should be applicable to the problem of the price-level also. It will be shown, in the course of the criticism which follows, first that the quantity theory contradicts each of these doctrines, in certain situations, and second, that in these cases, the conclusions based on the cost theory, the supply and demand theory, and the capitalization theory are right, and the conclusions based on the quantity theory are wrong. It has been maintained by certain writers, as Knut Wicksell[1] and Irving Fisher,[2] that

[1] "Der Bankzins als Regulator der Waarenpreise," Conrad's *Jahrbücher*, 1897.

[2] *Loc. cit.*, ch. 8.

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cost of production and supply and demand are inapplicable to the problem of the general price-level. I shall maintain the contrary, holding that while these doctrines are inapplicable to the problem of the *value* of money, they *are* applicable to the problem of general prices, on the assumption of a fixed value of money. By the value of money I mean its absolute[1] value, and not—what the quantity theorists commonly mean—its "purchasing power," or the "reciprocal of the price-level."

I shall undertake to show that no sound conclusion reached on the basis of quantity theory reasoning is the peculiar property of the quantity theory school; that every valid conclusion which may be based on the quantity theory may also be deduced from the theory maintained in this book, and, indeed, that most of them may be deduced from several other theories of money, notably the commodity or bullionist theory. I shall show a number of false and misleading doctrines which logically spring from the quantity theory, and shall undertake to show that the quantity theory fails to give an adequate basis for several important parts of the theory of money, among them Gresham's Law, the theory of international gold movements, and the theory of elastic bank-notes and deposit-currency.

So much for the theses to be maintained. The detailed proof of these contentions will best be given in connection with a critical account of various versions of quantity theory doctrine. Attention will be given in this summary to the expositions of Nicholson, Mill, Taussig, and Kemmerer, and very special attention to I. Fisher, though some other writers will also be taken into account.

[1] *Cf.* ch. on "Economic Value."

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CHAPTER VII

DODO-BONES

MUST money have value from some source outside its money-functions? It is a part of the quantity theory that this is unnecessary. I have cited, in the preceding chapter, Irving Fisher and J. S. Nicholson to this effect. Nicholson's statement is interesting and picturesque, exhibiting the quantity theory in all the nakedness of its poverty, and I shall present it at some length. "For simplicity," to isolate his phenomenon, he assumes a hypothetical market, in which the following conditions obtain: (1) No exchanges are to be made unless money (which he assumes to consist of counters of a certain size made of dodo-bones) actually passes from hand to hand. No credit or barter. (2) The money is to be regarded as of no use whatever except to effect exchanges, so that it will not be withheld for hoarding, *i. e.*, will be actually in circulation. (3) There are ten traders in the market, each with one kind of commodity and no money, and one trader with all the money (one hundred pieces), and no commodities. Further, let this moneyed man put an equal estimation on all the commodities. Now let the market be opened according to the rules laid down; then all the money will be offered against all the goods, and, every article being assumed of equal value, the price given for each article will be ten pieces, and the general level of prices will be ten. It is perfectly clear that, under these suppositions, if the amount of money had been one thousand pieces, the price-level would have been one hundred per article, etc. Under these very rigid assumptions, then, it is obvious that the value of money

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varies exactly and inversely with the amount put into circulation.—The rapidity of circulation he regards as coördinate, in fixing the price-level, with the volume of money. To illustrate this, he assumes again his hypothetical market, and "dodo-bones," assuming as before that one merchant has all the money (one hundred pieces), and that ten have commodities of equal value. Instead, however, of the merchant with the money desiring all the commodities equally, he is made to desire only the whole of that of trader one, who in turn desires the whole of number two's stock; and so on to the ninth merchant, who wants the commodity of number ten, *who wants the dodo-bones*. In this case, each article will be exchanged only once, as formerly, but the money will change hands ten times, and the price of each article will be one hundred instead of ten. "We now see that, under these circumstances, with the same quantity of money, and the same volume of transactions, the level of prices is ten times as great as before, and the reason is that every piece of money is used ten times instead of once." Whence he concludes: "The effect on prices must be the same when, in effecting transactions, one piece of money is used ten times as when ten pieces of money are used once." [1]

Ricardo, too, expresses the dodo-bone theory very explicitly. "If the state charges a seigniorage for coinage, the coined piece will generally exceed the value of the uncoined piece of metal by the whole seigniorage, because it will require a greater quantity of labour, or, which is the same thing, the value of the produce of a greater quantity of labour, to procure it.

"While the state alone coins, there can be no limit to this charge of seigniorage; for, by limiting the quantity of the coin, it can be raised to any conceivable value. It is

[1] Nicholson, J. S., *Money and Monetary Problems*, pp. 64–66; 71–73.

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on this principle that paper money circulates; the whole charge for paper money may be considered a seigniorage. Though it has no intrinsic value, yet, by limiting its quantity, its value is as great as an equal denomination of coin, or of bullion in that coin."[1]

Would the dodo-bones circulate? Nicholson chose the illustration to throw into the sharpest relief the absence of any value from a non-monetary employment. Nobody has any use for them *as* dodo-bones. What economic force is there, then, to make them circulate? Nicholson says nothing about an *agreement* among the traders, *assigning* a significance [2] to the dodo-bones, so that they might function in the same way that poker chips do—indeed, any such notion would vitiate his illustration, for he proposes to explain an adjustment of prices by natural economic laws. Why then, will any of the traders give up his valuable commodities for the worthless dodo-bones? Will you say that he will take them, not because he wants them himself, but because he knows that others will take them from him? But why would the others want them? Because they in turn can unload them on still others? But this seems a plain case of the vicious circle. It is, in effect, saying that the dodo-bones will circulate because they will circulate. A will take them because B will take them; B will take them because C will take them, C because . . . N will take them; N takes them because A will take them.[3] I do not deny that if the traders used the dodo-bones as

[1] *Works*, McCulloch ed. 1852, p. 213.

[2] *Cf.* the criticism of Nicholson by W. A. Scott, *Money and Banking*, 1903 ed., ch. 4.

[3] *Cf.* Mill, *Principles*, Bk. III, ch. xiii, par. 1. "Nothing more is needful to make a person accept anything as money, and even at any arbitrary value, than the persuasion that it will be taken from him on the same terms by others." It is not quite fair to identify Mill's doctrine with the circle stated above, however, since Mill couples it with a reference to convention, resting on the influence of government—a mention, without analysis, of some of the factors to be discussed shortly.

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counters, agreeing that such dodo-bones should represent some other commodity chosen as a standard of values, that the dodo-bones would circulate. But, in that case, they would be, not primary, self-sustaining money, but merely representative, or token money. And just here let me lay down two general propositions [1] respecting the two main functions of money: to serve as a standard, or common measure, of values, the article chosen must, as such, be valuable. The thing measured must be either a fraction or a multiple of the unit of measurement. But this quantitative relation can exist only between *homogeneous* things. The standard, or measure, of values, then, must be like the commodities whose values it is to measure, at least to the extent of having *value*.[2] The second proposition is respecting the medium of exchange. The medium of exchange must also have value, or else be a representative of something which has value. There can be no exchange, in the economic sense—I abstract from disguised benevolences, accidents, and frauds—without a *quid pro quo*, without value balancing value, at least roughly, in the process. Now when it is remembered that the intervention of the medium of exchange, taking the place of barter, really breaks up a single exchange under the barter system into two or more independent exchanges, and that the medium of exchange is actually received in exchange for valuable commodities, it follows clearly that the medium of exchange must either have value itself, or else represent that which has value. These two propositions seem almost too obvious to require the statement, but they contradict the quantity theory, and they are not, on the surface, reconcilable with certain facts in the history of incon-

[1] *Cf.* Knies, *Das Geld*, I, p. 140.

[2] *Cf. Social Value*, ch. 2. *Infra*, our chapter on "The Functions of Money."

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vertible paper money. It is necessary, therefore, to state them, and to examine further some of the phenomena which seem to contradict them. If they are true, Nicholson's dodo-bones will perform neither of the primary functions of money. They have no value, *per se*—they cannot, then, measure values; they are neither valuable nor titles to valuable things—they are not *quid pro quo* in exchange, and will not circulate.

I shall not pause long to discuss the doctrine that money needs no value itself, because it is really a sort of title to, or claim on, or representative of, goods in general. The notion, first, would not pass a lawyer's scrutiny. There are no such indefinite legal rights. A system of legally fixed prices, with a socialistic organization of society, would be necessary to give it definiteness—and in such a situation there would be no room for a quantity theory of prices! Economic goods, as distinct from money, are not generally "fungible" to the extent that would make them indifferent objects of legal rights. Besides, whether or not the thing is logically thinkable, it is legally false. Legal factors enter into the economic value of money, as will later be shown, but it is economic, and not legal, value, which makes money circulate. Helfferich has taken the trouble to give the notion of money as a mere title to things in general a somewhat more fundamental analysis, and I would refer the reader who is not satisfied by the foregoing on this point to his discussion.[1]

I wish to make very clear precisely how much I mean by the foregoing argument that circular reasoning is involved in saying that A will take the dodo-bones because B will take them. The same question arises for B, and for the others. The real question is as to the cause for any general practice of the sort. Why should A *suppose* that B will

[1] *Das Geld*, Leipzig, 1903, p. 477.

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take them? What could bring about such a system of social relations that a general expectation of this sort could arise?

Kemmerer undertakes to give an answer in a hypothetical case by the following ingenious assumption (*Money and Credit Instruments*, p. 11): the money consists of an article which formerly had a high commodity value, which has lately entirely disappeared, but the money continues to circulate, through the influence of custom, and because of the demand for a medium of exchange.

In this illustration Kemmerer recognizes the historical fact that money has originated from some commodity which had value because of its significance as a commodity. Historically, a great many different commodities have served, and gold and silver finally emerged victors for reasons which need not just now concern us. These historical facts, coupled with the idea that value is, essentially, "something physical," [1] or coupled with the notion that value arises only from marginal utility, or from labor, have been accepted by the Commodity or Metallist School as sufficient proof that standard money is only possible when made of some valuable commodity. Professor Laughlin seems to think of the whole thing as depending on the value of gold bullion, and to recognize the money-employment as a factor in affecting the value of money only in so far as it draws gold away from the arts, and so raises its value there by lessening the supply.[2] If money originated in a commodity, how is it possible for the commodity value to be withdrawn, and for money still to retain its value?

This brings us to a question I have raised before, namely,

[1] Laughlin, rejoinder to Clow, "The Quantity Theory and its Critics," in *Jour. of Pol. Econ.*, 1902.

[2] *Principles of Money, passim.*

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whether the genetic, or historical account of a social situation, and the cross-section analysis of the same situation, necessarily agree.[1] Is it possible that when a commodity basis was necessary to start the thing, and when even in the modern world gold bullion, interconvertible with gold coin, remains the ultimate basis of the money-systems of all great commercial peoples, that you could withdraw the commodity support and keep money unchanged in value? Or could you even have any value left at all? Now in answer, I propose to admit the possibility of so doing. The forces which a cross-section analysis reveals are not necessarily identical with those which a theory of origins sets forth. Once the thing is set going, the forces of inertia favor it. A new theory, fixed in the minds of the people, say the quantity theory itself, might give them such confidence in their money that its value might be maintained. A fiat of the government, making the money legal tender, supplemented by the loyalty of the people, might keep up its value. I think there is reason to believe that this is a source of no little importance of value for the German paper money to-day, and, to a less extent, of the notes of the *Banque de France*. All these possibilities I admit. Value is not physical, but psychological. And the form of value with which we are here concerned, economic value *par excellence*, is a phenomenon of social, rather than individual psychology. Many and complex are the psychical factors lying behind it. Belief, custom, law, patriotism, particularly a network of legal relationships growing out of contracts expressed in terms of the money in question, the policy of the state as to receiving the money for public dues, the influence of a set of customary or legally prescribed prices, which tie the value of

[1] *Cf. Social Value*, pp. 132–136, and *supra*, ch. on "Marginal Utility and Value of Money."

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money to a certain extent to the values of goods—factors of this character can add to the value of money, and can, conceivably, even sustain it when the original source of value is gone. Social economic value does not rest on marginal utility. In general, utility is essential, as one of many conditions, before value can exist, even though the intensity of the marginal want served by a good bears no definite relation to its value. But in the case of the value of a money of the sort here considered, marginal utility is in no sense a cause of the value. Rather, the marginal utility [1] of such money to an individual is wholly a reflection of its social value, and changes when that social value changes. It is quite consistent with the general theory of economic value which I have set forth in *Social Value*, for me to admit possibilities of this kind. The value of money in such a case has become divorced from its original presuppositions. The paper, originally resting on a commodity basis, or the coins originally valued because they could be transformed into non-monetary objects of value, have become objects of value in themselves. Analogous phenomena are common enough in the general field of values, and are less common in the field of economic values proper than one might suppose. Thus, most moral values tend to become independent of their presuppositions. Moral values of modes of conduct have commonly arisen because those modes of conduct were, or were supposed to be, advantageous in furthering other ends. Morality, in its essence, is *teleogical*. Yet so far have the moral ideals become ends in themselves that it is possible to have great thinkers, like Kant and Fichte, setting them up as eternal and unchangeable categorical imperatives, regard-

[1] Strictly speaking, there is no marginal utility, but only a "subjective value in exchange," for money of the sort here discussed. See *supra*, the chapter on "Marginal Utility."

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less of consequences. Thus Fichte declares, "I would not tell a lie to save the universe from destruction." Older still is the dictum, "*Fiat justitia, ruat coelum.*" Yet truth and justice, in the history of morals, and, in the view of most moral thinkers to-day, are of value primarily because they tend to preserve the universe from destruction, and would never have become morally valuable had they had the other tendency! Legal values manifest this tendency even more—one needs only to point to our vast body of technical rules of procedure in criminal cases, which persist long after their original function is gone, and after they have become highly pernicious from the standpoint of the ends originally aimed at. In the sphere of the individual psychology the phenomenon is very common. The miser's love for money is a classical example. The housewife who so exalts the cleanliness of her home that the home becomes an unhappy place in which to live, is an often-described type. The man who retires from business that he may enjoy the gains for the sake of which he entered business often finds that the business has become a thing of value in itself, and longs to be back in the harness, while many men, long after economic activity is no longer necessary, continue the struggle for its own sake. Activities arise to realize values. The value of the activity is derived from the value aimed at. But consciousness is economical, and memory is short. The activities become habits. The habits gather about themselves new psychological reactions. The interruption of habitual activities is distasteful. Life in all its phases tends to go on of its own momentum. The activities tend to become objects of value in themselves, whether or not their original *raison d'être* persist. In both the social and the individual sphere, apart from blind inertia and mechanical habit, active interests tend to perpetuate the old activities, whose *raison*

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d'être is gone. The judge who continues to apply the outgrown absurdities of adjective law may do it from timidity or from being too lazy to think out the new problems whose solution must precede readjustment to present social needs, but the criminal lawyer who can free his guilty client by means of these technicalities has an active interest in their perpetuation. The individual who would readjust his conduct in the light of changed interests finds that active opposition is met in the emotional accompaniment of the old habits. The economic society may wish to be free from a money whose original value is gone, but there is a powerful debtor interest which approves of that money, and whose support tends to maintain its value.

All these possibilities I admit. My own theory of value, which finds the roots of economic value ramifying through the total social psychological situation, rather than in utility or labor-pain alone, involves possibilities like these. But—and this is a point I wish especially to stress—we are out of the field of mechanics, and in the field of social psychology, when we undertake to explain the value of money that way. No longer is there any mathematical necessity about the matter. There is no such *a priori* simplicity as the quantity theory deals with. Factors like these might maintain the value of money for a time, and then wane. These factors might vary in intensity from day to day, with changing political or other events, leading the value of money to change from day to day, quite irrespective of changes in its quantity.[1] In so far as you have

[1] The psychological reactions of the people in times of stress and uncertainty toward different kinds of money cannot be predicted with any certainty, and there seems to be absolutely no definite or universal law governing the matter. The present writer collected a lot of newspaper clippings at the outbreak of the present World War. From these it appears that in both Paris and Berlin there was a very great distrust of bank-notes, and an insistence by retailers, restaurants, landladies, etc., on *coin*. But *silver*, which was not standard money, seems to have been accepted without ques-

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a people ignorant of the nature of money and of monetary problems, a people in the bonds of custom, with slightly developed commercial life, whose economic activities run in familiar grooves unreflectively, you will most nearly approximate a situation like that which Professor Kemmerer assumes. But that means that what might be true in India, or to a less degree in Austria—countries to which the quantity theorists are accustomed to refer—need not at all be true in the United States. Here everybody was talking about the theory of money in 1896—not necessarily very intelligently!—and here, moreover, such phrases as "good as gold," and propositions like that which came from Mr. J. P. Morgan in his testimony before the Pujo

tion. When hoarding is referred to in these clippings, it is invariably gold that is mentioned. A similar hoarding of gold took place during the Balkan crisis at the time of the outbreak of the war between the Balkan Allies and Turkey. Professor E. E. Agger informs me, however, that he has found some evidence that bank-notes as well as gold were hoarded in Austria, at this time.

Sometimes we have a suspension of Gresham's law, and an acceptance of all kinds of money at varying ratios. The following clipping from the *Boston Herald* of March 17, 1914, illustrates this: "Douglas, Ariz., March 16.—Four kinds of money are now circulating in the Mexican territory controlled by the Constitutionalists. These are United States currency, the first issues of the Constitutionalist government and of Sonora state, and 'Villa money,' or that issued by Chihuahua at the instance of the rebel military commander. United States takes precedence. Merchants in Sonora, in order to protect themselves and at the same time observe the laws requiring acceptance of the rebel currency issues, have established a sliding scale of prices. This was discovered when five merchants were arrested at Cananea by Constitutionalist secret service men, who found that for American money they could buy goods for less than half the amount exacted when payment was offered in Mexican currency. The uncertainty of the rebel campaign against Torreon is reflected in the money market. To-day Constitutionalist sold for 22 and 28 cents American on the peso. Mexican federal currency commanded from 30 to 32 cents." In the experience of travellers who have discussed the matter with the writer, there was little of this flexibility of relation between paper money and coin in Berlin, or Paris at the outbreak of the present War. Where paper was refused, it was absolutely refused, and where it was accepted, it seems to have been accepted without discount. No doubt, a fuller investigation would reveal all manner of variation in the behavior of different people in different centres, and at the same centres, at the outbreak of the War.

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Committee that "gold is money, and nothing else," would seem to indicate that a very great part of our people might utterly distrust such a money as Professor Kemmerer describes. The banker's tendency to look behind for the security, to test things out, to seek to get to bed-rock in business affairs, holds with a great many people. An overemphasis on this is responsible for the doctrine of Scott [1] and Laughlin [2] that the sole source of the value of inconvertible paper money is the prospect of redemption, and that inconvertible paper money differs from gold in value by an amount which exactly equals the discount at the prevailing rate of interest, with allowance for risk, for the period during which people expect the paper money to remain unredeemed. We have not the banker's psychology to any such extent as that. Apart from the fact that the money function adds to the value of money, under certain circumstances,—a point to be elaborated shortly—other, non-rational factors, contagions of depression and enthusiasm, patriotic support, "gold market" manipulations, etc., entered to break the working of the credit theory of paper money as applied to the American Greenbacks. I may here express the opinion that the credit theory is the fundamental principle in the explanation of the value of the Greenbacks, however. But we have not the banker's psychology to any such extent as the extreme forms of that theory would assume. "Uncle Sam's money is good enough for me," is a phrase I have heard from the Populists,—who, by the way, were pretty good quantity theorists! "The government is behind it." There are plenty of men for whom that assurance would be enough. Indeed, the general notion that in some way, not specified, perhaps not yet known to anybody, the government will

[1] *Money and Banking*, 1903 ed., pp. 58–60; 101–104.
[2] *Principles of Money*, p. 530.

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do what is necessary to maintain the value of its money is a ground which might well influence even the most sophisticated banker. I think such a general confidence in the English government has clearly been a factor in the price of Sterling exchange since the balance of trade turned so overwhelmingly against England in the present War.[1] Our monetary history, I may add, has been in considerable measure a struggle between these two opposing psychological reactions on that point. The utter breakdown of the *fiat* theory came in Rhode Island, and in connection with the Continental Currency, in the days before the Constitution was adopted. On the other hand, I do not believe that those who put a banker inside every one of us can prove that their principle has been a complete explanation at any stage of our monetary history. But clearly considerations like these take away all mathematical certainty from the matter.

The foregoing analysis makes clear, I trust, that the notion that the money function alone can make an otherwise valueless money circulate is untenable. There must be value from other sources as well. All that is conceded is that there need not be a physical commodity as the basis of the money. Value is not necessarily connected with a physical commodity.

There is a disposition on the part of many quantity theorists to beg the question at the outset, to assume money as circulating, without realizing how much this assumption involves. The assumption involves the further assumption that there are *causes* for the circulation of money. But the same causes which make money circulate will also be factors in the determination of the *terms* on which it circulates, *i. e.*, the prices. To seek then, by a new principle, the quantity theory, to explain these prices without reference

[1] Written in December, 1914.

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to these causes, is a remarkable procedure. There is sometimes a disposition to do the thing quite simply indeed: define money as the circulating medium, and, *by definition*, you have it circulating! A rather striking case of this, which is either tautology or circular reasoning, appears in Fisher's *Purchasing Power of Money* (p. 129): "Take the case, for instance, of paper money. So long as it has the *distinctive characteristic of money,—general acceptability at its legal value,*—and is limited in quantity, its value will ordinarily be equal to that of its legal equivalent in gold." (Italics mine.)

It is not quite easy to construct, even ideally, a social psychology which would perfectly fit the quantity theory. One would have to assume that money circulates purely from habit, without any present *reason* at all. The assumption must be that the economic life runs in steady grooves, so that quantity of goods exchanged will always be the same, or at least, that it will always be the same proportion of the goods produced—there must be no option of speculative holding out of the market allowed the holder of exchangeable goods. The individuals must have constant habits as to the *proportions* of the money they receive to be spent and to be held for emergencies. All the factors affecting "velocity" of both money and goods must be constant—Professor Fisher maintains very explicitly that velocities, both of money and of bank-deposits are fixed by habit (*loc. cit.*, p. 152),—and, in any case, the assumption is necessary. A thoroughly mechanical situation must be assumed, where there is the rule of blind habit. Given such a mechanism, you pour in money at one end, and it grinds out prices at the other end, automatically. But, strangely enough, in this social situation where blind habit rules, prices are perfectly fluid! In India, or in other countries where the assumptions of the quantity theorist come most

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nearly to realization, so far as the general rule of habit is concerned, one finds also many customary prices. In a country completely under the rule of habit, the prices would, as a matter of *psychological* necessity, be also fixed. What might then be expected to happen in such a country, if an economic experimenter should disturb them in their habitual quantity of money? Which habits would give way, those relating to prices, or those to velocities, or those relating to quantities of goods exchanged?[1] I shall not trouble to solve this problem, as it seems to me not the most useful way to approach the problem of the value of money, but I submit it to the consideration of advocates of the quantity theory. My present purpose is accomplished in pointing out the psychological assumptions which the quantity theory makes: a psychology of blind habit, in a situation where the price-level is free from control by customary prices.

Now at another point I wish to mediate between the quantity theorists and their extreme opponents. Representatives of the Metallist of Commodity School—like Professor Laughlin, and Professor Scott in his earlier writings—seem to deny that the money-employment has any direct effect in increasing the value of money. The money-employment affects the value of money only indirectly, by withdrawing the money metal from the arts, so raising the value of the money metal, and consequently raising the value of the coined metal. The quantity theory, on the other hand, would utterly divorce the value of money from causal dependence on the stuff of which the money is made. Both these views seem to me extreme. Unless money has value from some source other than the money employment, it cannot be used as money at all. Nobody will want it.

[1] *Cf.* Clow, F. R., "The Quantity Theory and its Critics," *Jour. of Pol. Econ.*, 1902, p. 602.

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On the other hand, the money use is a valuable use. Exchange is a productive process. Money, as a tool of exchange, enables men to create values. And you can measure the value of the money service very easily at a given time if you look at the short time "money-rates," *i. e.*, rates of discount on prime short term paper. These are properly to be considered, not interest on abstract capital, but the rent of a particular capital-good, namely, money. The money is hired for a specific service, namely, to enable a man to get a specific profit in a commercial transaction. Money is not the only good which can be thus employed, and which is paid for for this purpose. Ordinarily a man will pay for money for this purpose. Sometimes, however, one needs the temporary use of something else more than one needs money, and the holder of money pays a premium for the privilege of temporarily holding the other thing. I refer especially here to the practice of "borrowing and carrying" on the stock exchange. The "bear" sells stock which he does not possess, and must deliver the stock before he is ready to close his transaction by buying to "cover." He goes to a "bull" who has more stock than he can easily "carry," and who is glad to "lend" the stock in return for a "loan" of its equivalent in money. Ordinarily the bull is glad to pay a price for the money, as it is of service to him. Sometimes, however, the situation is reversed, and the service which the temporary loan of the stock performs for the hard-pressed bears is greater than the service which the money performs for the bulls, and the payment is reversed. When the bull pays a premium to the bear, for the use of the money, the amount paid is called "carrying charge," "interest charge for carrying," "contango," (London) or (in Germany) "*Report*." This is the usual case. But sometimes the bear pays the bull a premium for the use of the stock, and the charge is then called "premium for

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use," "backwardation," (London) or "*Deport*" (Germany).[1] Money is, thus, not the only thing which has a "use" in addition to the ordinary "uses" which are the primary source of its value.[2] In the case of other things, however, this kind of "use" is unusual. In the case of money it is the primary use. The essence of this use is to be found in the employment of a quantum of *value* in highly saleable form in facilitating commercial transactions. Commercial transactions, in this sense, are not limited to ordinary buying and selling. I think it best to defer further analysis of the money service to a later chapter, on the functions of money, which will best be preceded by a consideration of the origin of money. For the present, it is enough to note that money has certain characteristics which enable it to facilitate exchanges, and to pay debts, better than anything else, and that this fact makes an addition to its value. It is possible, I think, to measure this addition to value rather precisely in certain cases. Thus, in the case of the American Greenbacks, we find them at a discount, say from the beginning of 1877 on, as compared with the gold dollar in which they were to be redeemed in Jan. 1879. I think it safe to contend that the country was practically free from doubt as to their redemption after the early part of 1877. The discount steadily diminished as the time of redemption approached. Laughlin's theory is thus far beautifully vindicated. The central fact governing the value of the Greenbacks during this period was the prospect of redemption. But, and here I think we see the influence of the money-use, the discount was not as great as would have been called for by the prevailing rate of interest, as measured

[1] *Cf.* Emery, *Speculation*, pp. 90–91.

[2] *Cf.* Böhm-Bawerk's criticisms of the "use" theory of interest. (*Capital and Interest, passim.*) Both use theories and productivity theories are probably suggested, in part, by peculiarities which money possesses in preeminent degree. See *infra*, the chapter on the "Functions of Money."

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by the yield on other obligations of the Federal Government, at this time. And the discount completely disappeared some little time before the actual redemption. I see no cause for the absence of a discount in the later months of 1878 except the additional value which came from the money use. This additional value is, ordinarily, not very great. And money is not alone in possessing it. In extraordinary circumstances it may become quite large. Thus, in 1873, in the midst of the panic, the gold premium fell sharply. At this time the significance of the Greenbacks as a legal tender, a means of final payment of obligations (*Zahlungs-* or *Solutions-mittel*), as distinguished from medium of exchange (*Tauschmittel*), attained an unusual significance. In ordinary times, the marginal value of this function of money sinks to zero, but in emergencies it may become very great. In ordinary times, during the Greenback period, uncoined gold bullion, or gold coin used, not as money, but simply by weight in exchanges, played an important rôle, competing with the Greenbacks in various employments, particularly as bank reserves, and as secondary bank reserves, and so reducing the marginal value of the money-employment of the Greenbacks themselves. Gold bullion is not the only thing which can thus serve, however. To-day, and generally, securities with a wide market, capable of being turned quickly into cash, without loss, or capable of serving as the basis of collateral loans, up to a high percentage of their value, have a much higher value, for a given yield, than have other securities, equally safe, but less well-known and less easily saleable. The "one-house bond" (*i. e.*, the bond for which only one banking house offers a ready market) must yield a great deal more to sell at a given price than the bond of equal security which is listed on the exchanges, and has a wide market. Part of this is in illustration of another

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function of money, the "bearer of options" function, which enables the holder to preserve his wealth, and at the same time keep options for increasing its amount when bargains appear in the market. Foreign exchange performs many of these functions of money in European countries, particularly Austria-Hungary.[1]

The notion that the whole value of gold coin rests on its bullion content arises most easily in a situation where free coinage has long been practiced, and where there are no legal obstacles to the melting down of coin for other uses. Where free coinage is suspended, the peculiar services which only money can perform—or rather, the services which money has a differential advantage in performing—may easily lead to an agio for coined over uncoined metal. The mere fact that coined metal is of a definite fineness well known and attested is often of some consequence, though the attestation of well-known jewelers may give this advantage to metal bars as well, for large transactions. But for smaller transactions, nothing can easily take the place of money. A high premium on small coins, apart from redemption in standard money, may easily arise from the money-use alone. And standard coin may well attain, in greater or less degree, a premium. If it is scarce, as compared with the amount of business to be done, this premium may well be greater than if it is abundant. But that an indefinite premium is possible, or that this premium varies exactly and inversely with the quantity, I see no reason at all for supposing. If the premium be great enough, men, especially in large transactions, will make use of the uncoined metal—just as they did use gold in this country during the Greenback period. The advantages of money are not absolute. Money is simply more convenient for

[1] A more precise analysis of all these points will be given in the chapter on "The Functions of Money."

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many purposes than other things. The possibility of a premium is limited by the possibility of substitutes. It is further limited by the fact that a high premium would awaken a distrust which would bring the premium to destruction, by destroying trade, and so destroying the money-use on which the premium is based.

A detailed discussion of the Indian Rupee since 1893 lies outside the scope of this chapter. I think it may be well, however, to recognize at this point that the limitation in the quantity of the rupee, through abrogation of free coinage, was a factor in the subsequent rise in its value. It was not the only factor, by any means. But it was a factor. It may be also recognized as a factor in the value of Austrian paper money.

The doctrine just laid down, as to the influence of the money-use in adding to the value of money, is in no sense the same as the quantity theory. For one thing, it is easily demonstrated that the value-curve for the uses of money is not described by the equation, $xy = c$. This curve expresses, in terms of value, the idea of proportionality which is an essential part of the quantity theory. Put in terms of the money market, we have a demand-curve for money, not for the long-time possession of money, but for its temporary use—a rental, rather than a capital value, is expressed in the price which this curve helps to determine. This curve is highly elastic. When money-rates are low, transactions will be undertaken which will not be undertaken when the rate is a little higher. In the second place, the method of approach is very different. It is not the whole volume of transactions which must employ money, but only a flexible part. In the third place, the money-use is here conceived of as a source, not of the whole value of money, but only of a differential portion of that value. In the fourth place, the argument runs in terms of

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the absolute value of money, and not in terms of the level of prices.

It is not the legal peculiarity of money, as legal tender, which is necessarily responsible for this agio when it appears. In the first place, not all money is legal tender. In the second place, we find the same phenomenon in connection with "bank-money" at times—I would refer especially to the premium on the *marc banko* of the Hamburg Giro-bank. (*Cf.* Knapp, *Staatliche Theorie des Geldes*, p. 136.) The legal tender peculiarity may, however, in special circumstances be a source of a very considerable temporary agio.

It is possible, however, to frame a hypothetical case in which, barring temporary emergencies, the money-use will add nothing to the value of money, and in which the whole value of money will come from the value of the commodity chosen as the standard of values. Assume that the standard of value is defined as a dollar, which is further defined as 23.22 grains of pure gold. Assume, however, that no gold is coined. Let the circulating money be made of paper. Let this paper be redeemable, not in gold, but in silver, at the market ratio, on the day of redemption, of silver to gold. This will mean that varying quantities of silver will be given by the redeeming agencies for paper, but always just that amount required to procure 23.22 grains of gold. Let us assume, further, that the government issues paper money freely on receipt of the same amount of silver. Assume, further, that the government bears the charges which the friction of such a system would entail, by opening numerous centres of issue and redemption, by providing insurance against fluctuations in the ratio of silver to gold for a reasonable time before issue and after redemption, meeting transportation charges, brokerage fees, etc. In such a case, the standard of value would not be used as

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money at all. It would have no greater value than it would if it were not the standard of value—abstracting from the fact that in the one case it might be used in its uncoined form as a substitute for money more freely than in the other. In any case, it would form no part of the quantity of money. Its whole value would come from its commodity significance. The value of the paper money, however, would be tied absolutely to the value of gold. As gold rose in value, the paper money would rise in value, and vice versa. The quantity of money would be absolutely irrelevant as affecting its value. The quantity of silver would be likewise irrelevant. The causation as between quantity of money and value of money would be exactly the reverse of that asserted by the quantity theory. A high value of money would mean lower prices. With lower prices, less money would be needed to carry on the business of the country. Paper would then be superabundant. But in that case, paper would rapidly be sent in for redemption, and the quantity of money would be reduced.[1] The value of money would control the quantity of money. The standard of value, which was not the medium of exchange, would control the value of money, and so the level of prices, in so far as the level of prices is controlled from the money side.

In this hypothetical illustration, we have the extreme case of what the Commodity or Metallist School seems to assert. In this case, barring temporary emergencies too acute to admit of increasing the money-supply by the method described, their theory that the value of money comes wholly from the commodity value of the standard, would offer a complete explanation. I offer this illustration as the antithesis of the dodo-bone illustration of Nicholson.

[1] *Cf.* Professor Taussig's account of expansions and contractions of the silver currency in his *Silver Situation, passim.*

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That illustration sets forth the extreme claims of the quantity theory, and purports to be a case in which the quantity theory would work perfectly. The case illustrative of the commodity theory clearly brings out the fact that that theory rests on exclusive attention to the standard of value function of money. The dodo-bone theory gives exclusive attention to, but very imperfect analysis of, the medium of exchange function. But I submit that the extreme case of the commodity theory, in the illustration I have given, is a thinkable and consistent system. It would work—even though not conveniently. Indeed, it resembles in essentials the plan actually proposed by Aneurin Williams, and later by Professor Irving Fisher [1] for stabilizing the value of money. Substitute a composite commodity for gold, and gold for silver, in the illustration, and you have the essentials of that plan. The dodo-bone hypothesis, however, as I have been at elaborate pains to show in the foregoing, is unthinkable. It would not work. It is, thus, possible to construct a system for which the commodity theory would offer a complete explanation. It is not possible to do this for the quantity theory.

But the limiting case for the commodity theory is not the actual case. Standard money is also commonly a medium of exchange. Standard money is particularly desirable in bank and government reserves. Its employment in these and other ways is a valuable employment, and adds directly to its value both as money and in the arts. There is a marginal equilibrium between its values in the two employments. The notion that the only way in which the money employment adds to the value of money is an indirect one, by withdrawing gold from the arts, so lessening its supply and raising its value there, may be proved erroneous by this consideration: what, in that case, would determine the

[1] For bibliography, see *Am. Econ. Rev.*, Dec., 1914, pp. 838–839.

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margin between the two employments? What force would there be to withdraw gold from the arts at all? Why should more rather than less be withdrawn? There must be ascending curves on both sides of the margin. Gold money in small amount has a high significance per unit in the money employment. A greater amount has a smaller significance per unit. The marginal amount of gold put to work as money has a comparatively low significance in that employment—a significance just great enough to secure it from the competing employments in the arts.

We conclude, then, that money must have value to start with, from some source other than the money function, and that there must always be some source of value apart from the money function, if money is to circulate, or to serve as money in other ways. But this is not to assert the doctrine of the commodity school, that its value must arise from the metal of which it is made, or in which it is expected to be redeemed. Nor is it to deny that the money function may add to the original value. On the contrary, the services which money performs are valuable services, and add directly, under conditions which we shall analyze more fully in a later chapter on the functions of money, to the value derived from non-pecuniary sources. Value is not physical, but psychical. And value is not bound up inseparably with labor-pain or marginal utility.

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CHAPTER VIII

THE "EQUATION OF EXCHANGE"

In Professor Irving Fisher's *Purchasing Power of Money*[1] we have the most uncompromising and rigorous statement of the quantity theory to be found in modern economic literature. We have, too, a book which follows the logic of the quantity theory more consistently than any other work with which I am acquainted. The book deals with the theory more elaborately and with more detail than any other single volume, and sums up most of what other writers have had to say in defence of the quantity theory. Professor Fisher's book has, moreover, received such enthusiastic recognition from reviewers and others as to justify one in treating it as the "official" exposition of the quantity theory. Thus, Sir David Barbour cites Professor Fisher as the authority on whom he relies for such justification of the theory as may be needed,[2] while Professor A. C. Whitaker declares that he adopts "without qualification the whole body of general monetary theory" for which Professor Fisher stands.[3] Professor J. H. Hollander has recently referred to Professor Fisher's work on money and prices as a model of that combination of theory and inductive verification which constitutes real science.[4] The *American Economic Review* presents as an annual feature Professor Fisher's "Equation of Exchange."

[1] New York, 1911. All references to this book in the present volume are to the 1913 edition, which contains some new matter.

[2] *Standard of Value*, London, 1912, p. 48, n.

[3] *Papers and Proceedings*, Supplement to March, 1913, number of *American Econ. Review*, p. 131.

[4] *American Econ. Rev.*, Supplement to March, 1916, number, p. 138.

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Not all, by any means, of those who would call themselves quantity theorists would concur in Professor Fisher's version of the doctrine—Professor Taussig, notably, introduces so many qualifications, and admits so many exceptions, that his doctrine seems to the present writer like Professor Fisher's chiefly in name. But there is no other one book which could be chosen which would serve nearly as well for the "platform" of present-day quantity theorists as *The Purchasing Power of Money*. Partly for that reason, and partly because the book lends itself well to critical analysis, I shall follow the outline of the book in my further statement and criticism of the quantity theory, indicating Professor Fisher's views, and indicating the points at which other expositions of the quantity theory diverge from his, setting his views in contrast with those of other writers. We shall find that this method of discussion will furnish a convenient outline on which to present our final criticisms of the quantity theory, and parts of the constructive doctrine of the present book.

First, Professor Fisher presents in the baldest possible form the dodo-bone doctrine. The quality of money is irrelevant. The sole question of importance is as to its quantity—the number of money-units.[1] I shall not here discuss this point, as a previous chapter has given it extended analysis, except to repeat that it is in fact an essential part of the quantity theory. If the *quality* of money is a factor, a necessary factor, to consider, then obviously we have something which will disturb the mechanical certainty of the quantity theory. Professor Fisher is thoroughly consistent with the spirit of his general doctrine on this point.

Second, Professor Fisher has no absolute value in his scheme. By the value of money he means merely its pur-

[1] *Loc. cit.*, pp. 31–32.

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chasing power, and by its purchasing power he means nothing more than the fact that it does purchase: the purchasing power of money is defined as the reciprocal of the level of prices, "so that the study of the purchasing power of money is identical with the study of price levels." (*Loc. cit.*, p. 14.) In this, again, Professor Fisher is absolutely true to the spirit and logic of the quantity theory doctrine. The equilibration of numbers of goods, and numbers of dollars, in a mechanical scheme, gives prices—an average of prices, and nothing else. Any psychological values of goods or of dollars would upset the mechanism, and mess things up. They are properly left out, if one is to be happy with the quantity theory. Fisher, in discussion of Kemmerer's *Money and Credit Instruments*, has criticised the exposition of the utility theory of value with which Kemmerer prefaces his exposition of the quantity theory, as "fifth wheel." I agree thoroughly with Fisher's view in this, and would add that the only reason that it has made Kemmerer little trouble in the development of his quantity theory is that he has made virtually no use of it there! The two bodies of doctrine, in Kemmerer's exposition, are kept, on the whole, in separate chapters, well insulated. Coupled with this purely relative conception of the value of money, however, there is, in Fisher's scheme, an effort to get an absolute out of it: the general price-level is declared to be independent of, and causally prior to,[1] the particular prices of which it is an average. I mention this remarkable doctrine here, reserving its discussion for a later chapter.[2]

A further feature of Professor Fisher's system, to which especial attention must be given, is the large rôle played in it by the "equation of exchange." This device has been used by other writers before him, notably by Newcomb,

[1] *Loc. cit.*, pp. 175ff.

[2] "The Passiveness of Prices," *infra*.

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Hadley, and Kemmerer, receiving at the hands of the last named an elaborate analysis. But Fisher, basing his work on Kemmerer's, has made even more extensive use of the "equation of exchange," and has given it a form which calls for special consideration.[1] The "equation of exchange," on the face of it, makes an exceedingly simple and obvious statement. Properly interpreted, it is a perfectly harmless—and, in the present writer's opinion, useless—statement. It gives rise to complications, however, as to the meaning of the algebraic terms employed, which we shall have to study with care. The starting point is a single exchange: a person buys 10 pounds of sugar at seven cents a pound. "This is an exchange transaction in which 10 pounds of sugar have been regarded as equal to 70 cents, and this fact may be expressed thus: 70 cents = 10 pounds of sugar multiplied by 7 cents a pound. Every other sale and purchase may be expressed similarly, and by adding them all together we get the equation of exchange *for a certain period in a given community*."[2] The money employed in these transactions usually serves several times, and hence the money side of the equation is greater than the total amount of money in circulation. In the preliminary statement of the equation of exchange, foreign trade, and the use of anything but money in exchanges are ignored, but later formulations of the equations are made to allow for them. "The equation of exchange is simply the sum of the equations involved in all individual exchanges in a year. . . . And in the grand total of all exchanges for a year, the total money paid is equal in value to the total value of the goods bought. The equation thus has a money side and a goods side. The

[1] Particularly in view of the elaborate statistics, to be considered below, with which it is sought to make the equation realistic.

[2] *Loc. cit.*, p. 16ff.

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money side is the total money paid, and may be considered as the product of the quantity of money multiplied by its rapidity of circulation. The goods side is made up of the products of quantities of goods exchanged multiplied by their respective prices."

Letting M represent quantity of money, and V its velocity or rapidity of circulation, p, p′, p″, etc., the average prices for the period of different kinds of goods, and Q, Q′, Q″, etc., the quantities of different kinds of goods, we get the following equation:

$$MV = pQ + p'Q' + p''Q'' + \text{etc.}$$ [1]

"The right-hand side of this equation is the sum of terms of the form pQ—a price multiplied by the quantity bought."[2] The equation may then be written,

$MV = \Sigma\, pQ$ (Sigma being the symbol of summation). The equation is further simplified [3] by rewriting the right-hand side as PT, where P is the weighted *average* of all the p's, and T is the *sum* of all the Q's. "P then represents in one magnitude the level of prices, and T represents in one magnitude the volume of trade."

It may seem like captious triviality to raise questions and objections thus early in the exposition of Professor Fisher's doctrine. And yet, serious questions are to be raised. First, in what sense *is* there an equality between the ten pounds of sugar and the seventy cents? Equality exists only between *homogeneous* things. In what sense are money and sugar homogeneous? From my own standpoint, the answer is easy: money and sugar are alike in that both are *valuable*, both possess the attribute of economic social value, an absolute quality and quantity. The degree in which each possesses this quality determines the exchange relation between them. And the degree in

[1] *Loc. cit.*, p. 25. [2] *Ibid.*, p. 26. [3] *Ibid.*, p. 27.

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which each other good possesses this quality, taken in conjunction with the value of money, determines every other particular price. Finally, an average of these particular prices, each determined in this way, gives us the general price-level. The value of the money, on the one hand, and the values of the goods on the other hand, are both to be explained as complex social psychological forces. But when this method of approach is used, when prices are conceived of as the results of organic social psychological forces, there is no room for, or occasion for, a further explanation in terms of the mechanical equilibration of goods and money. Professor Fisher, as just shown, very carefully excludes this and all other psychological approaches to his problem of general prices, and has no place in his system for an absolute value. In what sense, then, are the sugar and the money equal? Professor Fisher says (p. 17), that the equation is an equation of values. But what does he mean by values in this connection? Perhaps a further question may show what he *must* mean, if his equation is to be intelligible. That question is regarding the meaning of T.

T, in Professor Fisher's equation, is defined as the sum of all the Q's. But how does one sum up *pounds* of *sugar*, *loaves* of *bread*, *tons* of *coal*, *yards* of *cloth*, etc.? I find at only one place in Professor Fisher's book an effort to answer that question, and there it is not clear that he means to give a general answer. He needs units of Q which shall be homogeneous when he undertakes to put concrete figures into his equation for the purpose of comparing index numbers and equations for successive years. "If we now add together these tons, pounds, bushels, etc., and call this grand total so many 'units' of commodity, we shall have a very arbitrary summation. It will make a difference, for instance, whether we measure coal by tons or hundred-

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weights. The system becomes less arbitrary if we use, as the unit for measuring any goods, not the unit in which it is commonly sold, but the amount which constitutes a 'dollar's worth' at some particular year called the base year" (p. 196). If this be merely a device for the purpose of handling index numbers, a convention to aid mensuration, we need not, perhaps, challenge it. The unit chosen is, in that case, after all a fixed physical quantity of goods, the amount bought with a dollar in a given year, and remains fixed as the prices vary in subsequent years. That it is more "philosophical" or less "arbitrary" than the more common units is not clear, but, if it be an answer, designed merely for the particular purpose, and not a general answer, it is aside from my purpose to criticise it here. If, however, this is Professor Fisher's *general* answer to the question of the method of summing up T, if it is to be employed in his equation when the question of *causation*, as distinguished from *mensuration*, is involved, then it represents a vicious circle. If T involves the price-level in its definition, then T cannot be used as a causal factor to explain the price-level. I shall not undertake to give an answer, where Professor Fisher himself fails to give one, as to his meaning. I simply point out that he himself recognizes that the summation of the Q's is arbitrary without a common unit, and that the only common unit suggested in his book, if applied generally, involves a vicious circle.

What, then, is T? Perhaps another question will aid us in answering this. What does it mean to *multiply* ten pounds of sugar by seven cents? What sort of product results? Is the answer seventy pounds of sugar, or seventy cents, or some new two-dimensional hybrid? One multiplies feet by feet to get *square* feet, and square feet by feet to get cubic feet. But in general, the multiplication

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of *concrete* quantities by *concrete* quantities is meaningless.[1] One of the generalizations of elementary arithmetic is that concrete quantities may usually be multiplied, not by other concrete quantities, but rather by *abstract* quantities, pure numbers. Then the product has meaning: it is a concrete quantity of the same denomination as the multiplicand. If the Q's, then, are to be multiplied by their respective p's, the Q's must be interpreted, not as bushels or pounds or yards of concrete goods, but merely as abstract numbers. And T must be, not a sum of concrete goods, but a sum of abstract numbers, and so itself an abstract number. Thus interpreted, T is equally increased by adding a hundred papers of pins,[2] a hundred diamonds, a hundred tons of copper, or a hundred newspapers. This is not Professor Fisher's rendering of T, but it is the only rendering which makes an intelligible equation.

We return, then, to the question with which we set out: in what sense is there an equality between the two sides of Professor Fisher's equation? The answer is as follows: on one side of the equation we have M, a quantity of money, multiplied by V, an abstract number; on the other side of the equation, we have P, a quantity of money, multiplied by T, an abstract number. The product, on each side, is a *sum of money*. These sums are equal. They are equal because they are *identical*. The equation asserts merely that what is *paid* is equal to what is *received*. This proposition may require algebraic formulation, but to the present writer it does not seem to require any formulation at all. The contrast between the "money side" and the "goods side" of the equation is a false one. There is no goods side. Both sides of the equation are money sides. I repeat that

[1] Where it is not meaningless, as at various points in the theory of mechanics, the product is always of a different denomination from either factor.

[2] *Vide* our ch. on "Supply and Demand," *supra*, for a discussion of Mill's doctrine as to the "demand" for money.

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this is not Professor Fisher's interpretation of his equation. But it seems the only interpretation which is defensible.

A further point must be made: Sigma pQ, where the Q's are interpreted as abstract numbers, is a summary of concrete money payments, each of which has a causal explanation, and each of which has effected a concrete exchange. Mathematically, PT is equal to ΣpQ, just as 3 times 4 is equal to 2 times 6. But from the standpoint of the theory of causation, a vast difference is made. Three children four feet high equal in aggregate height two men six feet high. But the assertion of equality between the three children and the two men represents a high degree of abstraction, and need not be significant for any given purpose. Similarly, the restatement of ΣpQ as PT. One might restate ΣpQ as PT, defining P as the *sum* (instead of the average) of the p's, and T as the weighted average (instead of the sum) of the Q's. Such a substitution would be equally legitimate, mathematically, and the equation, MV = PT equally true. ΣpQ might be factorized in an indefinite number of ways. But it is important to note that in PT, as defined by Professor Fisher,[1] we are at three removes from the concrete exchanges in which actual concrete causation is focused: we have first taken, for each commodity, an average, for a period, say a year, of the concrete prices paid for a unit of that commodity, and multiplied that average by the abstract number of units of that commodity sold in that year; we have then summed up all these products into a giant aggregate, in which we have mingled hopelessly a mass of concrete causes which actually affected the particular prices; then, finally, we have factorized this giant composite into two numbers which have no concrete reality, namely, an average of the averages of the prices, and

[1] What is here said of Fisher's equation of exchange applies, for the most part, to all versions of it.

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a sum of the abstract numbers of the sums of the goods of each kind sold in a given year—a sum which exists only as a pure number, and which, consequently, is unlikely to be a causal factor! It may turn out that there is reason for all this, but if a *causal* theory is the object for which the equation of exchange is designed, a strong presumption against its usefulness is raised. Both P and T are so highly abstract that it is improbable that any significant statements can be made of either of them. As concepts gain in generality and abstractness, they lose in content; as they gain in "extension" they lose (as a rule) in "intension." On the other side of the equation, we also look in vain for a truly concrete factor. V, the average velocity of money for the year, is highly abstract. It is a mathematical summary of a host of complex activities of men. Professor Fisher thinks that V obeys fairly simple laws, as we shall later see, but at least that point must be demonstrated. Even M is not concrete. At a given moment, the money in circulation is a concrete quantity, but the average for the year is abstract, and cannot claim to be a direct causal factor, with one uniform tendency. Of course Professor Fisher himself recognizes that his central problem is, not to state and justify, mathematically, his equation [1]—that is a work of supererogation, and the statistical chapters devoted to it seem to me to be largely wasted labor. Professor Fisher recognizes that his central problem is to establish *causal* relations among the factors in his equation of exchange. It is from the standpoint of its adaptability as a tool in a theory of causation that I have been considering it. It should be noted that "volume of trade," as frequently used, means not numbers of goods sold, but the money-price of all the goods exchanged, or PT. It is in

[1] *Loc. cit.*, p. 298. *Cf.* our chapter, *infra*, on "Statistical Demonstrations of the Quantity Theory."

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this sense of "trade" that bank-clearings are supposed to be an index of volume of trade. The sundering of the p's and Q's really is a big assumption of many of the points at issue. Indeed, it is absolutely impossible to sunder PT. It is always the p aspect of the thing that is significant, Fisher himself finally interprets T, statistically, as billions of *dollars*.[1] As a matter of mathematical necessity, either P must be defined in terms of T or T defined in terms of P. The V's and M and M′ may be independently defined, and arbitrary numbers may be assigned for them limited only by the necessity that $MV+M'V'$ be a fixed sum.[2] But P and T cannot, with respect to each other, be thus independently defined. The highly artificial character of T has been pointed out by Professor E. B. Wilson, of the Massachusetts Institute of Technology, in his review of Fisher's *Purchasing Power of Money* in the *Bulletin of the American Mathematical Society*, April, 1914, pp. 377–381. "Various consequences are readily obtained from the equation of exchange, but the determination of the equation itself is not so easy as it might look to a careless thinker. The difficulties lie in the fact that P and T individually are quite indeterminate. An average price-level P means nothing till the rules for obtaining the average are specified, and independent rules for evaluating P and T may not satisfy [the equation.] For instance, suppose sugar is 5c. a pound, bacon 20c. a pound, coffee 35c. a pound. The average price is 20c. If a person buys 10 lbs. of sugar, 3 lbs. of bacon, and 1 lb. of coffee, the total trading is in 14 lbs. of goods. The total expenditure is $1.45; the product of the average price by the total trade is $2.80; the equation is very far from satisfied." Wilson thinks it necessary, to

[1] *Purchasing Power of Money*, p. 290.

[2] The amplified equation is $MV+M'V'=PT$, which takes account of bank-credit. This is explained, *infra*.

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make the matter straight, to define T arbitrarily as $\frac{MV+M'V'}{P}$ in which case, the equation is true, but so obviously a truism that no one would see any point in stating it. T no longer has any independent standing. Fisher has, however, an escape from this status for T, but only by reducing P to the same position. He defines P as the *weighted* average of the p's (27), and fails, I think, to see how completely this ties it up with T. The only method of weighting the p's that will leave the equation straight is to weight the different prices by the number of units of each kind of good sold, namely, T. Thus, in Wilson's illustration, we would define P as $\frac{(5c.\times 10)+(20c.\times 3)+(35c.\times 1)}{14}$. P is then $10^5/_{14}$ c., while T is 14. PT is, then, equal to \$1.45, which is the total expenditure, or MV+M'V'. Be it noted, here, that P is defined in terms of T, *i. e.*, P is defined as a fraction, the denominator of which is T. No other definition of P will serve, if T is to be defined independently.

But notice the corollary. P must be differently defined each year, for each new equation, as T changes in total magnitude, and as the elements in T are changed. The equation cannot be kept straight otherwise. Suppose that the prices remain unchanged in the next year, but that one more pound of coffee, and two less pounds of sugar are sold. P, as defined for the equation of the preceding year would no longer fit the equation. P, as previously defined, would be unaltered, since none of the prices in it had changed. P, defined as a weighted average with the weights of the first year, would, then, still be $10^5/_{14}$ cents. The T in the new equation is 13. The product of P and T is \$$1.34^9/_{14}$. But the total expenditure, (MV + M'V') is \$1.70. The equation is not fulfilled. To fulfill the equation, it is necessary to get a new set of weights for P, in terms of the new T of the new equation. From the standpoint of a *causal*

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theory, this is delightful. P is the *problem*. But you are not allowed to *define* the problem until you know what the *explanation* is! Then you define the problem as that which the explanation will explain!

Fisher, however, appears unaware of this. At all events, he does not mention it. And he ignores it in filling out his equation statistically, for he assigns one set of weights to the particular prices in his P throughout.[1]

The causal theory with which the equation of exchange is associated is as follows: P is passive. A change in the equation cannot be initiated by P. If P should change without a prior change in one of the other factors, forces would be set in operation which would force it back to its original magnitude. M and T are independent magnitudes. A change in one does not occasion a change in the other. An increase or decrease in M will not cause a change in V. Therefore, an increase in M must lead to a proportionate increase in P, and a decrease in M to a proportionate decrease in P, if the equation is to be kept straight. Changes in T have opposite proportional effects on P.

Before examining the validity of the causal theory, and the arguments by which it is supported, it will be best to state the more complex formula which Professor Fisher advances as expressing the facts of to-day. The original formula ignored credit, and ignored the possibility of resort to barter. It also failed to reckon with certain complications which Fisher deals with as "transitional" rather than "normal."

The formula which includes credit is as follows:

$$MV + M'V' = PT$$

Here, MV and PT have the same significance as before. M′ is the average amount of bank-deposits in the given

[1] *Loc. cit.*, p. 487. I recur to this point in discussing the statistics of the "equation of exchange" in ch. 19.

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region for the given period, and V′ is the velocity of circulation of those deposits. M, money, consists of all the media of exchange in circulation which are *generally* acceptable, as distinguished from those which are acceptable under particular conditions, as by endorsement. M excludes money in bank reserves and government vaults. Money, specifically, includes gold and silver coin, minor coins, government paper money, and bank-notes; M′ consists of deposits transferable by check. This version would not satisfy such a writer as Nicholson,[1] who would limit money to gold coin, and would include in M′ not only deposits, but also bank-notes, and other credit instruments. I may suggest here, what I shall later emphasize, that Fisher's "money," though he doubtless is using the most common definition of money, is really a pretty heterogeneous group of things, concerning which it is possible to make few general statements safely. In economic essence, *e. g.*, bank-notes are much more like deposits than like gold, and if one wishes to separate money and credit, bank-notes belong with M′ rather than with M. But we must take the theory as we find it! Again, credit is by no means exhausted when bank-deposits are named. Why should not book-credits, and bills of exchange be included? Why not postal money-orders, why not deposits subject to transfer by the giro-system? M′ is defined[2] as "the total deposits subject to transfer by check," and would, thus, exclude the giro-system of Germany. It is surely a very provincial equation of exchange, with which Fisher and Kemmerer seek to set forth the universal laws of money! Fisher's reason for excluding book-credits is that book-credits merely postpone, and do not dispense with, the use of money and checks.[3]

[1] *Infra*, ch. on "Quantity Theory and World Prices." [2] *Loc. cit.*, p. 48.

[3] *Loc. cit.*, p. 370. The same position is taken by Kemmerer, *Money and Credit Instruments*, pp. 68 *et seq.* Mill denies the validity of these distinctions. See *Principles*, Bk. III, ch. 12, Par. 8.

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Book-credits, unlike deposits, have no *direct* effect on prices (*Ibid.*, 82, n.; 370), but only an indirect effect, by increasing the velocity of money. (*Ibid.*, 81–82; 370–371.) Book-credit, indeed "time-credit" in general thus has no direct effect on prices, and is properly excluded from the equation of exchange. These distinctions seem to me highly artificial. In the first place, the use of checks, in part, merely postpones the use of money: money is moved back and forth from one part of the country to another, and from one bank to another, to the extent that checks fail to offset one another, and in the case of book-credit, while there is less of this offsetting, there is a good deal of it, especially between stockbrokers in different cities, and in small towns and at country stores, and particularly in the South, where the country storekeeper and "factor" are also dealers in cotton, etc., and where they advance provisions during the year to the small farmers, receiving their pay, in considerable degree, not in money, but in cotton, which they credit on the books in terms of money to the customer—a point which Fisher mentions in an appendix. (*Ibid.*, p. 371.) The difference on this point is a difference in degree merely.[1] Further, Fisher makes the same point with reference to deposits subject to check that he makes with reference to book-credits, namely, that their use increases the velocity of money. To say that one has a *direct* effect on prices, and

[1] The above was written before the discussion in the *Annalist* (Feb. 7, Feb. 21, March 6, March 13, March 20, 1916) in which the present writer urged that Professor Fisher had greatly exaggerated the volume of trade in the United States by taking banking transactions as representative of trade. In reply (see especially the number for Feb. 21, pp. 245 *et seq.*) Professor Fisher maintains that the overcounting to which I call attention is offset by undercounting, and considers offsetting book-credits, which actually dispense with the use of money and checks, an important element in the undercounting. I am unable to reconcile this position with the reasons given for excluding book-credits from the "equation of exchange." A detailed discussion of the points at issue appears in later chapters, particularly in the chapter on "Statistical Demonstrations of the Quantity Theory."

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the other only an indirect effect is absolutely arbitrary. If buying and selling are what count, if prices are forced up by the offer of money or credit for goods, and forced down as the amount of money and credit offered for goods is reduced, then one exchange must count for as much as any other of like magnitude in fixing prices. The same is true of transactions in which bills of exchange or other credit devices serve as media of exchange. Of course these considerations do not render the equation of exchange, as presented by Fisher, untrue. The equation simply states that the money and bank-deposits used in paying for goods in a given period are equal to the amount paid for those goods in a given period. It makes no assertion concerning payments for other goods, and makes no assertion as to the amount of other transactions which are paid for in other ways. General Walker, presented with the problem of credit phenomena, simplifies the thing even more.[1] He rules out all exchanges which are effected by credit devices, counting only those performed by coin, bank-notes and government paper money, and insists that the general price-level is determined in those exchanges in which money alone (as thus defined) is employed. His equation—if he had considered it worth while to use one—would then have been simply

$$MV = PT$$

where T would be merely the number of goods exchanged by means of money. One could make a similar equation, equally true, by defining money as gold coin, and reducing T correspondingly. Is there any reason for limiting the equation at all?[2] Is there any reason for supposing that

[1] *Quarterly Journal of Economics*, vols. 8 and 9; *Political Economy*, pp. 169–175; *Money*, chs. 3–8.

[2] In our analysis of bank-loans, *infra*, we shall find reason to hold that

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any one set of exchanges is more significant for the determination of the price-level than any other set of exchanges? Does not the logic of the quantity theory require us to include all exchanges which run in terms of money?—If one wishes a complete picture of the exchanges, some such equation as this would be necessary:

$$MV + M'V' + BV'' + EV''' + OV'''' = PT,$$

where B represents book-credit, V'' the number of times a given average amount of book-credit is used in the period, E bills of exchange, and V''' their velocity of circulation, and O all other substitutes for money, with V'''' as their velocity of circulation. Even then we have not a complete picture, if direct barter or the equivalents of barter can be shown to be important.

For the present, I waive a discussion of the comparative importance of these different methods of conducting exchanges. The situation varies greatly with different countries. Fisher's and Kemmerer's equations are at best plausible when presented as describing American conditions, are much less plausible when applied to Canada and England, and are caricatures when applied to Germany and France.

So much for the statement of the equation of exchange, except that it is important to add that the period of time chosen for the equation is one year. Just why a year, rather than a month or two years or a decade should be chosen, may await full discussion till later. I shall venture here the opinion that the yearly period is not the period that should have been chosen from the standpoint of Fisher's

Walker, though false to the logic of the quantity theory, comes nearer to a tenable doctrine than do Kemmerer, Fisher, Andrew, and most other quantity theorists.

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causal theory, and that it probably was chosen, if for any conscious reason at all, because of the fact that statistical data which Fisher wished to put into it are commonly presented as annual averages. The question now is, however, as to the use to be made of the equation in the development of a causal theory.

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CHAPTER IX

THE VOLUME OF MONEY AND THE VOLUME OF CREDIT

JOHN STUART MILL, who first among the great figures in economics gives a realistic analysis of modern credit phenomena, thought that credit acts on prices in the same way that money itself does[1] and that this reduces the significance of the quantity theory tendency greatly, and to an indeterminate degree. The quantity theory is largely whittled away in Mill's exposition of the influence of credit. In Fisher we have a much more rigorous doctrine. The quantity of money still governs the price-level, because M governs M′. The volume of bank-deposits depends on the volume of money, and bears a pretty definitely fixed ratio to it. Just how close the relation is, Professor Fisher does not say, but the greater part of his argument, especially in ch. 8,[2] rests on the assumption that the ratio is very constant and definite indeed. At all events, the importance of the theory, as an explanation of concrete price-levels, will vary with the closeness of this connection, and the invariability of this ratio. It is not too much to say *that the book falls with this proposition*, to wit, that M controls M′, and that there is a fixed ratio between them. We would expect, therefore, a very careful and full demonstration of the proposition, a care and fullness commensurate with its importance in the scheme. But the reader will search in vain for any proof, and will find only two propositions which purport to be proof. These are: (1) that bank reserves

[1] *Principles*, Bk. III, chs. 11 and 12. [2] *Purchasing Power of Money.*

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are kept in a more or less definite ratio to bank deposits; (2) that individuals, firms and corporations preserve more or less definite ratios between their cash transactions and their check transactions, and between their cash on hand and their deposit balances.[1]

If these be granted, what follows: the money in bank-*reserves* is no part of M! M is the money in circulation, being exchanged against goods, not the money lying in bank-vaults![2] The money in bank-vaults does not figure in the equation of exchange. As to the second part of the argument, if it be granted, it proves nothing. The money in the hands of individual and corporate depositors is by no means all of M. It is not necessarily the greatest part. The money in circulation is largely used in small retail trade, by those who have no bank-accounts. A good many of the smallest merchants in a city like New York have no bank-accounts, since banks require larger balances there than they can maintain. Enormous quantities of money are carried in this country by laborers, particularly foreign laborers. "The Chief of the Department of Mines of a Western State points out that when an Italian, Hungarian, Slav or Pole is injured, a large sum of money, ranging from fifty dollars to five hundred or one thousand, is almost always to be found on his person. A prominent Italian banker says that the average Italian workman saves two hundred dollars a year, and that there are enough Italian workmen in this country, without considering other nationalities, to account for three hundred million dollars of hoarded money."[3] I do not wish to attach too great importance to these figures, taken from a popular article in a popular periodical. It is proper to point out, too,

[1] *Loc. cit.*, pp. 50–51.

[2] *Loc. cit.*, p. 280.

[3] A. W. Atwood, "Hoarded Gold," *Saturday Evening Post*, Dec. 12, 1914, p. 26.

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that these figures relate to hoarded money, rather than to M, the money in circulation. But in part these figures represent, not money absolutely out of circulation, but rather, money with a sluggish circulation. And they are figures of the money in the hands of poor and ignorant elements of the population. Outside that portion of the population—larger in this country than in any other by far [1]—which keeps checking accounts, are a large body of people, the masses of the big cities, the bulk of rural laborers, especially negroes, the majority of tenant farmers, a large proportion of small farm owners, especially nominal owners, and not a few small merchants in the largest cities, who have no checking accounts at all. A very high percentage of their buying and selling is by means of money. Kinley's results [2] show that 70% of the wages in the United States are paid in cash, and, of course, the laborers who receive cash pay cash for what they buy. (Not necessarily at the *time* they buy!) Money for pay-rolls is one of the serious problems in times of financial panics.[3] To fix the proportion between money in the hands of bank depositors and non-depositors is not necessary for my purposes—*a priori* I should anticipate that there is no fixed proportion. But it is enough to point out that money in the hands of depositors is not the whole of Fisher's M. Of what relevance is it, then, to point out, even if it were true, that an unascertainable portion of M tends to keep a definite ratio to M′, when the thing to be proved is that the *whole* of M tends to keep a definite ratio to M′? Fisher's argument is a clear *non-sequitur*. If it proves anything, it

[1] *Cf.* Kinley, D., *The Use of Credit Instruments*, Senate Document 399, 1910, pp. 192–194.

[2] *Ibid.*, pp. 102–103. In the same volume, on p. 200, the figures are given *incorrectly*, as 70% checks and 30% cash. C. A. Phillips, *Readings in Money and Banking*, 1916, p. 151, repeats this erroneous statement.

[3] *Cf.* Sprague, *Crises under the National Banking System*, Nat. Monetary Commission Report, pp. 71–75; 200, 202.

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proves that a sum of money,[1] not part of M, and another sum of money, an unknown fraction of M, each independently, for reasons peculiar to each sum, tends to keep a constant ratio to M′. This gives us *l'embarras des richesses* from the standpoint of a theory of causation! Two independent factors, bank-reserves and money in the hands of depositors, each tending to hold bank-deposits in a fixed ratio, and yet each moved by independent causes! By what happy coincidence will these two tendencies work together? Or what is the causal relation between them? And if, for some yet to be discovered reason, Professor Fisher should prove to be right, and there should be a fixed ratio between M as a whole and bank-deposits, would it not indeed be a miracle if all three "fixed ratios" kept together? Bank-deposits, indissolubly wedded to three independent variables [2] (independent, at least, so far as

[1] *Cf.* also p. 280 of Fisher's *Purchasing Power of Money.*

[2] Kemmerer (*Money and Credit Instrnmeuts*, p. 80) maintains that, "under perfectly static conditions," money in circulation and money in bank reserves will keep a fixed relation to one another. He offers no argument to support this view. Of course, "under perfectly static conditions," everything keeps in fixed relation to everything else. The volume of credit will keep a fixed relation to the number of laborers and to the supply of clocks. But this would hardly establish causal connections! Fisher multiplies "fixed relations" of various kinds, without, so far as very diligent search can tell, offering any argument to support them. Thus, we have on p. 105 the statement, "We have seen that normally the quantities of other currency are proportional to the quantity of primary money, which we are supposing to be gold." Where this thesis has been demonstrated, he does not indicate. In view of the fact that gold has been the one really flexible element in our money supply, the thesis is hardly credible. On pp. 146–147, facing this difficulty, Fisher says: "Since, however, almost all the money can be used as bank reserves, even national bank-notes being so used by state banks and trust companies, the proportionate relations between money in circulation, money in reserves, and bank-deposits will hold approximately true as the normal condition of affairs. The legal requirements as to reserves strengthen the tendency." Here is a very substantial growth in the doctrine, with only one new argument, namely, that concerning legal reserve requirements—which gives minimal ratios, not *fixed* ratios. In what way the fact that most kinds of money can serve as legal reserves gives reason for the doctrine of fixed proportions is not made clear. For Professor Fisher, however,

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anything Professor Fisher has said would show, and independent in large degree, certainly, so far as any reason the present writer can discover), must find their treble life extremely perplexing. May it not be that Professor Fisher has pointed the way to the real fact, namely, that bank-deposits are subjected to a multitude of influences, no one of which is dominant, which prevent any fixed ratio between bank-deposits and any other one thing? At a later point, I shall maintain that this is, indeed, the case.

Be it noted further, however, that even if we grant a fixed ratio, on the basis of Fisher's argument, between M and M′, Fisher has offered no jot of proof that the causation runs from M to M′. He simply assumes that point outright. "Any change in M, the quantity of money in circulation, *requiring as it normally does a proportional change in M′*, the volume of deposits subject to check." (*Ibid.*, p. 52, Italics mine.) For this, no argument at all is offered. A fixed ratio, so far as causation is concerned, might mean any one of three things: (a) that M controls M′; (b) that M′ controls M; (c) that a common cause controls both. Fisher does not at all consider these alternative possibilities. I shall myself avoid a sweeping statement as to the causal relations among the factors in the equation, because I do not think that any of the factors is homogenous enough, as an aggregate, to be either cause or effect of anything. But if a generalization concerning these magni-

it seems quite enough, for on p. 162, in the heart of his causal theory, he boldly announces: "There must be some relation between the amount of money in circulation, the amount of reserves, and the amount of deposits. Normally *we have seen* that the three remain in given ratios to each other." (Italics mine.) It is doubtless somewhat dangerous to make a confident negative statement concerning a book which has no index. But careful reading of all that has preceded this statement reveals no references to this topic except those quoted above. "We have seen" is not a legitimate premise when so important an issue is involved. In our discussion of reserves in the section on credit, as well as in the discussion of the volume of trade, it will appear that no "normal" or "static" relations of this kind are possible.

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tudes were required, I should be disposed to assert that the third alternative is the most defensible, and that to the extent that M and M′ vary together it is under the influence of a common cause, namely, PT! That is to say, that the volume of bank-deposits and the volume of money tend to increase or decrease in a given market—and Fisher's theory is a theory of the market even of a single city [1]—*because of* increases or decreases in PT (considered as a unitary cause rather than as two separate factors) in that market. But I shall not put my proposition in quite that form, as I find the factors in the equation of exchange too indefinite for satisfactory causal theory.

So much for the validity of Fisher's argument, assuming the facts to be as he states them. Are the statements correct? Do banks tend to keep fixed ratios between deposits and reserves? Do individuals, firms, and corporations tend to keep fixed ratios between their cash on hand and their balances in bank? Regarding this last tendency, Professor Fisher says in a footnote on p. 50, "This fact is apparently overlooked by Laughlin." I think it has been generally overlooked. I have found no one who has discovered it except Professor Fisher. Certainly no depositor whom I have consulted can find it in his own practice—and I have put the question to "individuals, firms, and corporations." The further statement which Professor Fisher adduces in its support does not prove it, namely, that cash is used for small payments, and checks for large payments.[2] It would be necessary to go further and prove that large and small payments bear a

[1] "The price-level outside of New York City, for instance, affects the price-level in New York City only *via* changes in the money in New York City. Within New York City it is the money which influences the price-level, and not the price-level which influences the money. The price-level is effect and not cause." (*Loc. cit.*, p. 172.)

[2] *Loc. cit.*, p. 50.

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constant ratio to one another, and further, that velocities of money and of bank-deposits employed in these ways bear a constant relation. If Fisher has any concrete data, of a statistical nature, to support the doctrine of a constant ratio between bank-balance and cash on hand in the case of individual depositors, he has failed to put them into his book. Nor is there any statistical evidence offered in the case of banks. It should be noted here that finding a general average for a whole country or community would not prove Fisher's point. General averages give no concrete causal relations. Fisher's argument, moreover, starts with individual banks and individual deposit-accounts (pp. 46 and 50) and generalizes the individual practice into a community practice. He would have to offer data as to individual cases.

While general averages could not *prove* the contention of a constant ratio between reserves and deposits for individual banks, general averages can *disprove* the contention. A constant general average would be consistent with wide variation in individual practices, on the principle of the "inertia of large numbers." But if the general average is *inconstant*, it is impossible that the individual factors making it up should be constant. This disproof is readily at hand, both for the ratio of deposits to reserves in the United States, and for the ratio of demand obligations to reserves among European banks (most of which do not make large use of the check and deposit system).

For the United States, from 1890 to 1911, taking yearly averages, we have a variation in the ratio of reserves to deposits of over 73% of the minimum ratio. The ratio was 26% in 1894, and 15% in 1906. "The juxtaposition of these extreme variations shows how inaccurate is the assumption that the deposit currency may be treated as a substantially constant multiple of the quantity of

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money in banks."[1] For New York City, the annual average percentage of reserves of Clearing House banks to net deposits varies from 24.89% in 1907 to 37.59% in 1894.[2] The extreme variations[3] in weekly averages are (for the sixteen years, 1885–1900) 20.6% in August, 1893 and 45.2% in February, 1894. These figures are extreme, since the number of occurrences is small for them, but there are numerous occurrences of deviations from the mean as wide apart as 24% and 42%.[4] The yearly fluctuation in all these ratios is very great.

The ratio of money held by the banks and money held by the people also shows wide variation, and considerable yearly fluctuation. There is a further complication, for the United States, of varying proportions of the total monetary stock held by the Federal Treasury. As between the banks and the public, the banks held about a third in 1893 (average for the year), and nearly half in 1911.[5] Whatever may be the relations between money in the hands of the people, money in banks, and volume of deposits, in "the static state," there is no statistical evidence whatever to justify the notion of fixed relations among them in real life.[6] We shall later show that there can be no static laws whatever governing the relations of credit and reserves.[7]

For European banks, the case is equally clear. European

[1] W. C. Mitchell, *Business Cycles*, p. 306.

[2] *Ibid.*, p. 325.

[3] J. P. Norton, *Statistical Studies in the New York Money Market*, p. 71, and chart opposite p. 72.

[4] *Ibid.*, chart facing p. 72.

[5] *Cf.* Mitchell, *loc. cit.*, chart, p. 298, and text, p. 295. As the ratio of *reserves* to *money in circulation* was greater in 1911 than in 1894, and as the ratio of *deposits to reserves* was also higher, we have a still wider variation in the ratio of *money in circulation* to *deposits*—M : M′.

[6] See the striking figures collected by A. P. Andrew for 1907. *Quart. Jour. of Econ.*, Feb. 1908, p. 297.

[7] *Infra*, our discussions of the relations of volume of money and credit to volume of trade, and our discussion of credit in the constructive part of the book. The theory of money and credit must be a dynamic theory.

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bankers deny any intention of keeping any definite reserve ratio. This appeared very clearly in the "Interviews" obtained for the Monetary Commission with leading European bankers.[1] The Banque de France increased its gold reserves, between 1899 and 1910, by 75%, but increased its discounts and advances during the same period by only 5%.[2] J. M. Keynes[3] points out that the reserves of the great banks of the world, and of Treasuries which act as central banks, have absorbed an enormous part of the gold produced in the fifteen years before the War, increasing their holdings from about five hundred million pounds sterling in 1900 to one billion pounds sterling at the outbreak of the War. "The object of these accumulations has been only dimly conceived by the owners of them. They have been piled up partly as the result of blind fashion, partly as the almost *automatic consequence*, in an era of abundant gold supply, of the particular currency arrangements which it has been orthodox to introduce. . . . The ratios of gold to liabilities vary very extremely from one country to another, without always being explicable by reference to the varying circumstances of those countries. . . . The contingencies, against which a gold reserve is held, are necessarily so vague that the problem of assessing the proper ratio must be, within wide limits, indeterminate. It is natural, therefore, that bankers, who must act one way or the other, should often fall back on mere usage or accept *that amount of gold as sufficient* which, *if they are chiefly passive, the tides of gold bring them.* [Italics mine.] At any rate, the management of gold reserves is not yet a science in most countries. There is no ideal virtue in the present level of these re-

[1] Senate Document, No. 405, 1910. For the Bank of England, see p. 25; for the Crédit Lyonnais, pp. 224–226; for the Deutsche Bank, pp. 374–375.

[2] *Statist*, 1912, p. 577.

[3] "The Prospects of Money," British *Economic Journal*, Dec. 1914.

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serves. Countries have got on in the past with much less, and under force of circumstances could do so again."

It will be noticed that Keynes, in the passage cited, is speaking of *gold* reserves, while Fisher's contention relates to all kinds of money available for reserves, which in this country would include gold, silver dollars, greenbacks, and, for many State banks, the notes of national banks. He is also talking of the relation of reserves to demand *liabilities*, which for most great European banks are primarily notes, rather than of reserves to deposits. But as an exposition of the theory of the ratio of reserves to deposits (the chief liability of American banks), it is applicable to American conditions, and as a statement of the facts, it of course gives a basis for testing Fisher's doctrine generally. I do not think that Fisher's fixed ratio, as between reserves and deposits, or even the ratio which more moderate quantity theorists might seek to find between gold and demand liabilities, will find any justification in the facts of banking history.[1]

A factor which has developed on a grand scale in recent years has tended still further to weaken any tendency that may be supposed to exist toward a fixed ratio between money-reserves and demand-liabilities. I refer to the gold exchange-standard, in India, the Philippines, and elsewhere, and to the practice of the great banks of the continental countries of Europe, particularly the Bank of Austria-Hungary, of holding foreign gold bills, rather than gold exclusively, as reserve to cover note issue. In the case of the Austro-Hungarian Bank, which has carried this practice to the extreme, all possibility of a fixed ratio between gold reserves and demand-liabilities has vanished. The ratio is highly flexible. When bills are cheap, *i. e.*, when the exchange is "in favor" of Austria-Hungary, the

[1] *Cf.* Ashley, W. J., *Gold and Prices*, N. Y., 1912, pp. 21 *et seq.*

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Bank buys bills with gold; when bills are high, when the exchanges have turned "against" Austria-Hungary, the Bank sells bills for gold. Commonly, the holder of a note of the Austro-Hungarian Bank does not ask for it to be redeemed in gold, but in foreign exchange. The reason for this practice on the part of the Bank is primarily economy. A large holding of gold would represent idle capital —a heavy burden for the Bank of a debt-ridden and poorly developed country. Foreign bills, however, serve equally well for maintaining the value of the bank-notes, and at the same time bear interest.[1] A similar practice has been employed by the Reichsbank, by the National Bank of Belgium,[2] by virtually all the debtor countries of Europe, and the great trading countries of Asia.

Confidence in these conclusions is much increased by a study of the views of Professor Taussig.[3] Professor Taussig is, in his initial formulations of his doctrine, a quantity theorist. In a situation where only money is used, credit being excluded, in effecting exchanges, he would hold that the quantity theory correctly accounts for prices. He is fond of the old formulation, as a first approximation, even in dealing with the complex facts of modern banking. But he does not dodge the complex facts, and his theory becomes, substantially, first, a general formula, and second, an elaborate body of qualifications and exceptions, the latter making up the major part of the theory. His doctrine regarding the relation of money and credit is as follows: there is, in the long run, a real *limitation* on elastic credit instruments in the quantity of *specie*. (This is very

[1] *Cf.* von Mises, "The Foreign Exchange Policy of the Austro-Hungarian Bank," British *Econ. Jour.*, 1909, vol. 19. *Cf.* Keynes, *Indian Currency and Finance.*

[2] Conant, *Principles of Money and Banking*, vol. II, p. 50. In 1899, the reserve of the Bank of Belgium consisted of 107 millions (francs) in specie, and 108 millions in foreign bills.

[3] *Principles of Economics*, vol. I, pp. 432 *et seq.*

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different from the assertion that there is a *fixed* ratio between *deposits* and *money* in circulation, including paper, bank-notes, etc., in money. The present writer has no quarrel with the doctrine that the gold supply of the *world* imposes *outside* limitations on the *possible* expansion of credit.) The limitation, Taussig holds, comes in two ways: (1), in the connection between prices in any one country, and prices in the world at large; (2), in various links of connection between the volume of deposits (and of notes elastic like deposits) and the quantity of specie. I shall consider at a later point the relation between prices in different countries.[1] I shall there maintain that the quantity theory, which explains gold movements on the basis of price-*levels* in different countries, is inadequate; that not price-levels, but particular prices, of goods most available for international trade, are of primary importance, and that of these particular prices, one, namely the "price of money," or the short time money-rate, is most significant of all. For the present, I wish to analyze the linkages which Taussig finds between elastic credit instruments and specie, and to see how far they would go, not in proving Taussig's point (with which I have little quarrel) but in proving Fisher's contentions. The points involved are: (a) *Direct necessity* constrains the bankers to keep *some* cash on hand.[2] This fixes a *minimum limit* (Taussig's contention), but does not at all suggest a "normal ratio" (Fisher's contention). (b) *Binding custom*, as to the proper amount of reserve that banks should carry, particularly important in connection with the Bank of England, but also in evidence in the Banque de France and the Reichsbank. Here again, however, minimal, rather than

[1] In the chapter on "Quantity Theory and International Gold Movements," *infra*.

[2] The Joint Stock Banks in England keep "till money" in cash, even though their "reserves" are chiefly deposits at the Bank of England.

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fixed, ratios are suggested. Limitations on the *expansion* of credit these customs may impose, but they by no means determine a normal, or average amount of credit expansion —in England least of all, since there is so large a flexible element in the deposits of the Joint Stock Banks, whose reserves are largely secret. The statement *supra* quoted from Keynes, together with the testimony of European bankers, may be considered in connection with this point, also, as to the factors determining the reserve policies of the great European banks. The extent to which custom really binds is doubtful. (c) *Direct regulation by law*, peculiar to the United States. Here again, a minimum, rather than a fixed ratio, is indicated. Some *limitation* on credit expansion by the banks is caused by this at times, but Fisher's argument would require vastly more. (d) *The interaction in the use of deposits, notes, and other constituents in the circulating medium.* The point involved here is that different kinds of business call for different kind of media. Small retail business is not done with hundred dollar bills, nor are stocks and bonds bought with pennies. Limiting the size of bank-notes to five pounds in England compels the use of a large amount of gold for smaller transactions, and keeps a larger amount of gold in use than would otherwise be the case. Expanding business draws cash from the banks for circulation, trenching on reserves. That Professor Taussig has a point here is not to be doubted, but how closely it limits the expansion of credit will depend on the degree to which different kinds of media of exchange really *are* thus specialized. In a country like the United States, where checks may be used for virtually any transaction of over a dollar, and where small change for less than a dollar will be increased by the Government to meet the demands of trade, the point would not seem to involve a practically serious limitation.

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Finally, Professor Taussig recognizes a coefficient with the quantity of specie in the *temper of the business community*. Whether or not deposits are to expand, depends not only on reserves, but also on the attitude of borrowers.

Taussig concludes: "Thus there is only a rough and uncertain correspondence of bank expansion with bank reserves; much play for ups and downs which have no close relation to the amount of cash in bank vaults, *and still less direct relation to the amount of money afloat in the community at large.* Where bank media, whether in the form of deposits or notes, are an important part of total purchasing power, the connection between general prices and quantity of 'money' is irregular and uncertain." (Italics mine.)

This conclusion would be of little service in supporting Fisher's rigorous contentions! Our constructive theory concerning the relations of reserves and deposits, or reserves and demand liabilities, must wait for later discussion, in the chapter on "Bank Assets and Bank Reserves" in Part III. It will there be maintained that there are no "normal" or "static" laws governing the percentage of reserves to demand liabilities, or to deposits, that the reserve function of money is a *dynamic* function, and that its whole explanation must be found in dynamic considerations. For the present, I am content to have analyzed two widely divergent views, one the extreme view of Professor Fisher, representing the quantity theory in its utmost rigor, and the other, the view of Professor Taussig, who virtually surrenders the quantity theory in complex modern conditions.

In between these two writers, verging more toward Fisher than toward Taussig, will be found, with great individual variation, the rest of the quantity theorists. The quantity theory, as an instrument of prediction, becomes important only to the extent that Fisher's view is maintained.

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CHAPTER X

"NORMAL" VS. "TRANSITIONAL" TENDENCIES

THE Quantity Theory, as a causal theory, is, then, little altered by the passage from a hypothetical, creditless economy to the actual world, where a vast deal of credit is used,—particularly in Professor Fisher's hands. Of the different kinds of credit, only deposits subject to check are recognized as directly influencing prices, and deposits subject to check are controlled by the volume of money. The causal theory [1] remains, then, as follows: if M be increased, it will increase M′ proportionately; it will not change the V's; it cannot increase T; to keep the equation straight, therefore, P must rise in proportion to the rise in M. A decrease of M, reducing M′ proportionately, leaving V's and T unchanged, must proportionately reduce P. P is passive. A change in P cannot sustain itself, unless it be due to a prior change in T, the V's, M or M′.

This theory is set forth with the qualification that these effects are the "normal" effects of the changes in question. The proportion between quantity of money and price-level is not strictly maintained during "transition periods." I now approach the most difficult question which I shall have to answer as to the meaning of Fisher's terms. The same problem arises for all quantity theorists. Precisely what is the distinction between "transition periods" and "normal periods"? What limitations and qualifications does he admit to the rigorous statement of his theory so far

[1] Fisher, *loc. cit. passim*. *Vide* especially ch. 8.

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given? I may first express the opinion that the line shifts greatly in his own mind, or at least shifts greatly in the exposition. I do not find an explicit statement in which definitions are given. The matter is chiefly discussed by Fisher in ch. 4,[1] which is called "Disturbance of Equation and of Purchasing Power during Transition Periods." There we find, as I have stated, no definitions, but the initial statements would suggest the following: a transition period is the period following a change in any one of the factors in the equation during which a readjustment among all the others is taking place; the normal period is the period preceding such a change, or following the transition after such a change, and is characterized by the fact that all the factors are at rest, in stable equilibrium. Equilibria during transition periods are unstable. During the transition, the relations among the factors vary: M and M′ need not keep their fixed ratio; P need not be wholly passive; M and P need not keep the same proportion. But until M and M′ get back into the normal ratio, until P becomes proportional to M (in the proportion prior to the initial disturbance), there is no rest; the equilibrium is unstable. How long is a transition period? How realistic is the notion of a transition period? Is the transition period a theoretical device, to aid in isolating causes, or is it supposed to be a real period in time? Is the normal period a real period in time, or is it merely a theoretical hypothesis? It is not easy to answer these questions. Thus (p. 72) the seasonal fluctuations are declared to be "normal and expected," and, at the same time, one gets the impression that Fisher considers them illustrations of his "transitions," in which the normal theory does not strictly hold (pp. 72, 169). What is described chiefly in the chapter on transition periods is the business cycle—a theory of the business

[1] *Purchasing Power of Money.*

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cycle, based primarily on the notion that the failure of interest to rise as fast as prices rise causes the "boom," and that the draining of bank reserves precipitates the crisis. I shall not discuss this theory, as a theory of business cycles, further than to say that Wesley Mitchell's study would indicate that the interest rate is a minor factor, and that, while as a theoretical possibility, the drains on bank reserves may check prosperity if something else doesn't do it first, practically something else always does come in ahead, so far as his studies have gone.[1] My interest here is primarily in seeing the limitations Fisher imposes on his theory, and the qualifications he admits. If the business cycle is the typical transition period, during which his normal theory doesn't hold, when does the normal theory hold? When are the "normal periods"? There is no concrete period during which prices are neither rising nor falling, during which no important changes are taking place among the factors.[2] At times, Fisher seems to indicate that the normal period is imaginary (pp. 56, 159). Is, then, the contrast between a realistic "transition period" and a hypothetical "normal period" or are both hypothetical? Is the equation of exchange, too, a mere hypothesis? It should be, if it is to set forth a merely hypothetical theory. But no, Fisher insists on putting concrete data into it, and, indeed, gives an elaborate statistical "proof" of the equation. It, at least, is realistic. I confess that my certainty as to Fisher's meaning grows less, as I study his book with greater care. If the typical transition period be the business cycle, then the normal period could come only once, say, in ten years—or whatever period, regular, or irregular, one chooses to assign to the

[1] *Business Cycles*, pp. 580, 595–596.

[2] *Cf.* C. M. Walsh, *The Measurement of General Exchange Value*, pp. 480–481.

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business cycle. The concrete price-levels for the greater part of the time are then surrendered to other causes. And the one-year cycle described in the equation of exchange is quite irrelevant. The equation of exchange should cover the whole business cycle, to fit in with the theory. Indeed, a realistic equation of exchange would then have no meaning at all, as the average price-level during the business cycle, played upon by a host of causes other than the factors described in the quantity theory, would not be the same as the average price-level which *would have* obtained had only the "normal" causes been in operation.[1]

The distinction between "normal" and "transition" *periods* suggests a dangerous fallacy: namely, that during one period one sort of causation is working, with the other in abeyance. In fact, whatever causes there are are working all the time. The only legitimate thing is to abstract from one set of causes, and see what the other set, if left to themselves, will bring about. But this sort of abstraction has many dangers, one of which is that the causes abstracted from are frequently thought of as non-existent. The chemist, in his laboratory, can in actual physical fact abstract impurities from his chemicals, and see what they will do. He can even perform experiments in what is practically a vacuum. But the economist has no right to *think in vacuo!* All that he has a right to do is to assume the factors which he does not wish to study *constant*. And even that he must not do if (1) changes in the factors which he wishes to study do in fact lead to changes in the factors abstracted from, or (2) if the factors which he wishes to study can only change *because of* prior or concomitant

[1] On pp. 314–315, and elsewhere, Fisher indicates that *all* the causes affecting prices operate *through* the factors in the equation of exchange. *Cf.* p. 74. This would require a concrete equation of exchange throughout.

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changes in the factors from which he is abstracting. Is it, for example, legitimate to assume an increase in M′ apart from its usual accompaniment, an increase in PT?

The notion, too, that causation can be seen in a state of stable equilibrium should be critically analyzed. Causation is only *revealed* by a *course of events*, when mechanical causation is involved. The relation of cause and effect may be a contemporaneous relation in fact, and it is possible, where conscious, psychological phenomena are involved, to discern causal relations among the elements in a mental state by direct introspection. It is the not uncommon practice, also, in the theory of mechanics, or in theoretical economics, where the method of investigation is deductive rather than inductive, to abstract from the temporal sequence, and to construe causal relations as timeless, logical relations. But even here, the cause of a *change* in the general situation precedes the change in time, and it is only by abstraction that the time element is left out. If there is no question as to the causal relations, this abstraction is legitimate, but if all that one knows about the situation be that in a stable equilibrium certain constant ratios obtain, then the question as to which term in the ratio is cause and which is effect remains unanswered. In Fisher's situation, then, assuming that it be true—which I shall deny—that the only stable equilibrium is that which the normal theory requires, it still remains true that the causal relations among the factors can only be revealed by a study of the transitions, by seeing the temporal sequence of changes in the factors of the equation. Even if it be granted that M, M′ and P tend to keep a constant relation to one another, the quantity theory falls if, for instance, it can be shown that a change may first occur in P, spread to M′, and finally reach M last of all, leading to a new

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normal equilibrium which is stable. I shall later show cases of this sort.[1]

The abstract formulation of Fisher's contrast will not, I believe, give us an answer as to the extent to which he thinks his quantity theory realistic. I find myself particularly in genuine uncertainty as to the point mentioned above: would an actual equation of exchange for the whole business cycle, made up of the averages of M, M′, V, V′, P and T for the whole period, exhibit the "normal" relations among these factors? Or would this "normal" relation only emerge concretely at some moment of time in the course of the cycle when the abnormal causes affecting the price-level happened to offset one another? Or is it true that no actual figures which might be found, either for a moment of time, or as averages for any given period, will exhibit the relations required, and that only a hypothetical equation, based on the figures for M, M′, V, V′, P and T that *would have been realized* had there been no "disturbing" causes, will show these "normal" relations? If, as Fisher at times indicates—as in his reference to Boyle's Law (p. 296)—he is stating only an abstract tendency, which may be neutralized by other tendencies in the situation, so far as concrete results are concerned, then it is this last doctrine which we must take, and the concrete equation of exchange has little if any relevance. If, moreover, this last interpretation be given, then the whole of Fisher's elaborate statistical "proof" is pointless. The only sort of statistical proof which would be relevant would be of a much subtler sort, not a mere filling out of the equation of exchange by means of annual figures, but an effort to disentangle and measure the *importance* of his tendency, as compared with other tendencies. But we have the other tendencies merely mentioned in qualitative terms, and we

[1] Chapter on "Passiveness of Prices."

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never find any definite statement, of mathematical character, as to how important they are.

It seems pretty clear, however, that on the whole, despite occasional suggestions that his theory is abstract, Fisher means his theory to be the overwhelmingly important point in the explanation of actual price-levels. He is particularly insistent on the high degree of the generality of his contention that P is passive. Thus: "So far as I can discover, *except to a* LIMITED *extent during transition periods, or during a passing season, (e. g., the fall)* (capitals mine, italics Fisher's), there is no truth whatever in the idea that the price-level is an independent cause of changes in any of the other magnitudes, M, M′, V, V′, or the Q's." [1] On p. 182 he enumerates in a series of propositions his general normal theory, and adds, as the first sentence of proposition 9: "Some of the foregoing propositions *are subject to* SLIGHT *modification during transition periods.*" (Italics and capitals mine.) And the general drift of the argument, particularly in chapter 8, where the heart of Fisher's causal theory is presented, would indicate that the concessions he is disposed to make are very slight, indeed.

The question as to how long a *time* is required, in Fisher's view, for a transition to occur, and for his normal tendencies to dominate, is nowhere made clear. The quantity theory, in the hands of some writers, is a very long run theory, for others, it is a short run theory. Thus, Taussig would make the "run" exceedingly long.[2] Mill makes it a short run theory. "It is not, however, with ultimate or average, but with immediate and temporary prices, that we are now concerned. These, as we have seen, may deviate widely from the standard of cost of production. Among other

[1] *Loc. cit.*, p. 169.

[2] *Cf.* his *Silver Situation.* 1878 to 1891 do not give time enough for quantity of money to dominate volume of credit, in his exposition!

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causes of fluctuation, one we have found to be, the quantity of money in circulation. Other things being the same, an increase of the money in circulation raises prices, a diminution lowers them. If more money is thrown into circulation than the quantity which can circulate at a value conformable to its cost of production, the value of money, so long as the excess lasts, will remain below the standard of cost of production, and general prices will be sustained above the natural rate." [1] I pause to note that it is really strange that a single name should describe theories so different, resting on such essentially different logic. Long run or short run theories, all are "quantity theories," whether "money" be defined as gold, or as all manner of media of exchange, or as only those media of exchange which pass from hand to hand without endorsement. Fisher would doubtless call his theory a long run theory. From the standpoint of the notion that "prices . . . lag behind their full adjustment and have to be pushed up, so to speak, by increased purchases," [2] however, we get a short run quantity theory doctrine. The logic of these two is very different. The short run doctrine seeks to explain the actual process of price-making in the market. Money is offered against goods, and the actual quantities on each side determine the momentary price-level, concretely. Or, when credit is considered, money and credit offered against goods, at a given time, or in a given short period, determine the actual price-level reached. This is the logic of the equation of exchange—actual money paid is necessarily equal to actual money received. The long run doctrine is fundamentally based on a different notion. Surrendering the actual or average of price-levels to other causes, in part, it still asserts that, given time enough, and barring new disturbing tendencies, a price-level will ultimately be

[1] Mill, *Principles*, Bk. III, ch. 12, par. 1. [2] Fisher, *loc. cit.*, p. 62.

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reached which will bear it out. I find no recognition, on Fisher's part, of the fact that these two doctrines are different, and, in fact, I find them blended and confused in the course of his argument. He would doubtless maintain that his is a long run doctrine. But how long is the "run"? Sometimes it seems to be, as already shown, a whole business cycle. Sometimes a passing season, as the fall. When he undertakes to apply his theory to a practical proposal for regulating the value of money, he relies on the quantity theory tendency to bring about adjustments so quickly that it is worth while to make *monthly* adjustments in anticipation of it.[1] When discussing the changes in gold premium on the Greenbacks during the exciting times of the Civil War, he relies so thoroughly on his theory that he will not allow even the rapid change of four per cent in a single day following Chickamauga to occur except in conformity with the quantity theory. This last statement is so remarkable that I must quote Fisher himself: "It would be a grave mistake to reason, because the losses at Chickamauga caused greenbacks to fall 4% in a single day, that their value had no relation to their volume. This fall indicated a slight acceleration in the velocity of circulation, and a slight retardation in the volume of trade" (263). It would be indeed remarkable if the changes in the gold market, which got war news before the newspapers got it, and where changes in gold premium occurred before the rest of the country could possibly react to the war news, should be controlled by V and T! I had not supposed that the most rigorous of short run quantity theorists would make any such demands on his theory as that. Indeed, I had not supposed that the quantity theory would feel called on to explain the gold premium, as such, except in so far as the gold premium is an index of general prices.

[1] "A Compensated Dollar," *Quart. Jour. of Econ.*, Feb. 1913.

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Finding it impossible to limit Fisher to any single statement of the quantitative importance of his normal theory as compared with the other tendencies at work, but concluding that, on the whole, he considers it of high importance, I shall now proceed to an analysis of the reasoning by which he seeks to justify it as a *qualitative* tendency. I shall maintain that, however long or short the period required, however strong or weak the tendency he defends, the reasoning by which he seeks to justify it is unsound, and that even as a qualitative tendency, the quantity theory is invalid. At a later part of the book, as in an earlier part,[1] I shall undertake to find the modicum of truth which the quantity theory contains, and shall show that no quantity theory is needed to exhibit this modicum of truth.

[1] The chapter on "Dodo-Bones," *supra*, and the chapter on "The Quantity Theory and World Prices," *infra*.

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CHAPTER XI

BARTER

In the statement of the quantity theory, the proviso is commonly made that all exchanges must be made by means of money, or of money and bank-credit. Barter is excluded by hypothesis. If resort to barter were possible, then people might avert the fall in prices due to scarcity of money, or increase in trade, by dispensing with money in part of their transactions, and the proportional decrease in prices which the quantity theory calls for would be lacking. Is this assumption true? Is barter banished from the modern world, or does it remain reasonably possible, and, to a considerable degree, actual?

Fisher maintains the thesis—the failure of which he admits would spoil the quantity theory [1]—that barter is practically impossible, and negligible in modern business life. "Practically, however, in the world to-day, even such temporary resort to barter is trifling. The convenience of exchange by money is so much greater than the convenience of barter, that the price adjustment would be made almost at once. If barter needs to be seriously considered as a relief from money stringency, we shall be doing it full justice if we picture it as a safety valve, working against a resistance so great as almost never to come into operation, and then only for brief transition intervals. For all practical purposes and all normal cases, we may assume that money and checks are necessities for modern trade." [2]

[1] *Loc. cit.*, p. 156.

[2] *Ibid.*, p. 160.

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This contention seems to me untenable. I think it can easily be shown that barter remains an important factor in modern business life, especially if one extends the term barter, a little, to cover various flexible substitutes for the use of money and checks in effecting exchanges. Clearly from the standpoint of the present issue, such an extension of the meaning of barter is legitimate, as any such substitutes would equally spoil the proportionality in the supposed relation between prices and money, or prices and trade.

Where does one find barter? Well, not to be ignored would be the advertisements which fill many columns of such a paper as the New York *Telegram* in the course of a week: "Wanted: to trade a well-trained parrot for a violin" —a trade that might, or might not, be a wise one! There is a good deal of such simple barter among the people. Then, perhaps more important, is the regular practice of sewing machine, piano, automobile, and other similar companies of taking part of the payment for a new machine, piano,[1] or automobile in the similar thing which the owner is discarding. The old machine, piano, etc., are then repaired, repainted, and sold again. This is a very extensive practice. Again, there are companies which combine the business of wrecking old houses and building new ones, who regularly take the old materials as part of their pay. This is a highly important feature of the organized building trade in great cities, and is frequently done in small towns. The building trade is no negligible matter. The "horse-trade" still thrives in rural regions, and barter of various kinds, of live stock, of grain and hay, of fresh and cured meat, and of labor, is an important feature in

[1] Or organs for pianos, etc. A common practice—less common in the North than formerly—is the payment of bills at country stores in produce. There is not a little barter at secondhand stores in New York City.

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rural life in many sections. Much of agricultural rent in the South is still paid in kind, under the "share system." Much labor, especially farm and domestic labor, is still paid for partly in kind. Where payments for labor are made in orders on company stores, we have again what is virtually barter, from the standpoint of the point at issue. *Real estate* transactions make large use of barter. Farms are exchanged for one another, with some cash (or more usually, a promissory note) "to boot." The writer has repeatedly heard real estate men say to customers: "I can't sell it for you very easily, but I can trade it off, and maybe you can sell what you trade it for." This is perhaps more frequent in rural real estate transactions, and in the smaller cities, than in large cities, but it is very extensive in New York City.[1]

Again, when corporations are to be combined, various plans are possible. There may be a merger; there may be a holding corporation; there may be a lease. If the money market is easy, one of the former methods will be used,—most frequently, for legal reasons, the holding corporation, if there are any valuable franchises involved. But mergers and holding corporations commonly involve buying out the interests which are to be absorbed, and call for the use of checks. If the money market is tight, therefore, the promoter of the combination may frequently find the lease the more advantageous form of consolidation.[2] The great advantage of the lease is that, when the money market is tight, it involves no *financial plan*, no underwriting, no outlay of "cash." This is, therefore, an equivalent of

[1] Mr. Burton Thompson, of No. 7 Wall St., who knows the real estate situation there intimately, states that while dealers do not like to "swap" real estate, and do little of it when business is good, they are forced to do it extensively when business is sluggish, "as has been the case for the past four or five years."

[2] *Cf.* E. S. Meade, *Corporation Finance*, p. 376, and *passim*.

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barter, so far as the point at issue is concerned. Even where a holding corporation is formed, however, there may be considerable barter: the stockholders of the corporation which is absorbed may receive payment for their stocks, in whole or in part, in the securities of the holding company, rather than in checks. An era of financial consolidation, such as we have been passing through, and through which we have not by any means gone, though the movement toward *monopoly* has been in great degree checked, presents a great deal of this sort of barter, or equivalents of barter.[1] A striking thing to notice here, moreover, is the flexible margin between use of bank-credit and barter, a margin depending primarily upon the condition of the money market, and particularly upon the money-rates.

Not yet has the most important element in modern barter been mentioned. I refer to the "clearing-house" arrangements of the stock and produce exchanges. Under these arrangements, brokers who have sold ten thousand shares of Westinghouse El. and M. Common during the day, and bought seven thousand shares, buying and selling being in smaller lots, with a number of different houses, no longer are obliged to deliver ten thousand shares, receiving therefor $700,000, and to receive seven thousand shares, paying therefor $490,000. Instead, they deliver three thousand shares only to the clearing house, and receive from the clearing house only $210,000 when the transaction is, from the standpoint of the particular broker involved, completed. This is a far remove, in technical perfection, from primitive barter, but it *is* barter, and it

[1] The same thing often happens when a bond issue is paid off—bondholders may take their pay in new bonds. "Conversions" of bonds into stocks, or of preferred into common stock, are also barter transactions. $220,000,000 of the $420,000,000 which Mr. Carnegie and his associates received from the Steel Trust for their plants, etc., was paid, not with money and checks, but with bonds. *Vide* Stevens, *Industrial Combinations and Trusts*, p. 101.

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saves the using of a vast deal of bank-credit as between brokers. How important it is, from the standpoint of the stock exchange, may be judged from the following statement in Sprague's *Crises Under the National Banking System:* "A much more fundamental change in the organization in the New York money market came with the establishment of the stock exchange clearing house in May, 1892. It led to a very considerable reduction in the *clearing-house exchanges of the banks* and also, and more important, in the volume of certified checks. [Italics mine.] Over-certification of checks ceased to be a factor of the first magnitude in the banking methods of the city. Had not this arrangement for stock-exchange dealings been set up, it is probable that it would have been necessary to close the stock exchange in 1893 and in 1907, and it is also probable that the volume of business transacted in the years after 1897 could not have been handled." (P. 152.)

The same arrangements have been widely introduced in other stock exchanges, and in the produce exchanges.[1]

[1] The foregoing had been written before the discussion in the *Annalist* of Feb. and March, 1916 (pp. 183–184, 245–272, 313–317, 344, 377), in which Professor Fisher and the present writer joined issue with reference to Professor Fisher's estimate, 387 billions, for the volume of trade in the United States in 1909. The present writer contended that the banking transactions which Professor Fisher took as representative of trade greatly overcounted trade, since they included loans and repayments, taxes, several checks in one transaction, gifts, etc., etc. Professor Fisher contended that the overcounting was offset by undercounting, and instanced particularly the clearing-house arrangements in the speculative exchanges, where checks are in part dispensed with, and the offsetting in "running accounts" through book-credit. This indicates a substantial change in Professor Fisher's view as compared with that set forth in the *Purchasing Power of Money*, where he maintains, as shown above, that barter is virtually non-existent, that money and checks are "for all practical purposes and all normal cases," "necessities of modern trade," (p. 160), and that book-credit merely postpones, and does not dispense with, the use of money and checks (p. 370).

The extent of the offsetting by barter, clearing-houses in the exchanges, and book-credit, though very great, is quite small as compared with Professor Fisher's 387 billions, and does not nearly offset the overcounting. The writer has obtained some fairly definite data on this point, which will

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In general, with reference to barter, this point is significant. The money economy has made barter *easier* rather than harder. It has made possible a host of refinements in barter, which make it at many points more convenient and cheaper than check or money exchanges. It is common to find our present methods of conducting foreign trade described as a "system of refined barter," which indeed, from the standpoint of the present issue, it is: bills of exchange are neither money nor bank-credit! Where bills of exchange are used in internal trade extensively—as in Germany, where they pass from hand to hand in several transactions before being discounted at banks [1]—we have a highly important substitute for money and deposits, which functions as barter,—flexibility of substitutes for money and deposits is strikingly evident. The feature of the money economy which has thus refined and improved barter is the *standard of value* (*common measure of value*) function of money.[2] This standard of value function, be it noted, makes no call on money itself, necessarily. The *medium of exchange* and "*bearer of options*" functions of money are the chief sources of such additions to the value of money as come from the money-use. But the fact that goods have money-prices, which can be compared with one another easily, in objective terms, makes barter, and barter-equivalents, a highly convenient and very important feature of the most developed commercial system. And so we reject another essential assumption of the quantity theory.[3]

be presented in the chapter on "Statistical Demonstrations of the Quantity Theory," in discussing the volume of trade.

[1] *Miscellaneous Articles on German Banking*, Report of National Monetary Commission, p. 175. *Cf. infra*, pp. 288–290.

[2] *Cf.* our chapter on "The Functions of Money," *infra*.

[3] One familiar feature of corporation finance makes barter much preferable to money transactions, in one connection, which involves very many corporations indeed, at their inception. Stock, in order to be marketable,

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must be "full-paid and non-assessable." If the corporation sells its stock to the first stockholders, this means that money must be paid for it to the full par value, dollar for dollar. This is usually not easy. An especial difficulty would then present itself that the promotor would have trouble in getting any pay for his work. (Meade, *Corporation Finance*, *passim;* Sullivan, *American Corporations*, *passim.*) If, however, the stocks are paid for in *goods and services*, the courts are much less exacting in looking to see if full value has been received. Barring obvious fraud, the courts will usually count the stock full paid and non-assessable even though the value of the goods and services received is not very great. The first sale of the stocks of a new corporation, therefore (if it is important enough to wish to have a public market for its stocks), is a *barter* transaction, as a rule.

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CHAPTER XII

VELOCITY OF CIRCULATION

For the quantity theory, it is important to treat velocity of circulation of money and of deposits, as self-contained entities, really independent factors. This is true of Fisher's theory. It is particularly necessary that V and V′ should vary from causes unconnected with M and M′. The V's are to be a sort of inflexible channel, through which M and M′ run in their influence on the passive P, which is to rise or fall proportionately with them. If an increase of M or M′ should lead to a reduction in the V's, if people, having more money available, should be less assiduous in using every bit of it in effecting exchanges, then P would not rise in proportion to the increase in M. Complete demonstration of Fisher's thesis, therefore, requires the proof of the negative proposition that V does not change as a consequence of changes in M or M′. This proof Fisher finds in the contention that the V's are fixed by the habits and conveniences of individuals, whence they are not influenced by such a cause as a change in the amount of money.[1]

V is defined,[2] not as the number of times a given dollar is exchanged in a given year (the "coin-transfer" notion), but as a social average based on the average number of coins which pass through *each man's* hands, divided by the average amount held by him (the "person-turnover" concept of velocity.) V′ is similarly defined. Fisher asserts that both concepts, if correctly employed, lead to the same result. I would point out one important difference between

[1] *Purchasing Power of Money*, p. 152.

[2] *Ibid.*, pp. 352 *et seq.*

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them here: if money is *short-circuited*, if, *i. e.*, a part of the economic community loses its incomes, or finds its incomes reduced, then the "velocity of money," on the "coin-transfer" basis is reduced, provided the "person-turnover" average remains the same, while on the "person-turnover" basis the velocity will remain unchanged. It is clearly the "coin-transfer" concept which is fundamental, from the standpoint of the equation of exchange, and Fisher feels justified in using the other method only because he considers it an equivalent of the "coin-transfer" concept. I shall later show cases where the distinction between the two concepts is all-important, particularly in the case where T is reduced by the elimination of *middlemen*.[1]

The conception of velocity of circulation as a real, unitary entity, a *cause*, in the process of price-determination, is, I suppose, almost as old as the quantity theory itself. It is an essential part of the quantity theory. To me "velocity of circulation" seems to be a mere name, denoting, not any simple cause or small set of causes, which can exert a specific influence, but rather a meaningless abstract number, which is the non-essential by-product of a highly heterogeneous lot of *activities of men*, some of which work one way, and others of which work in another way, in affecting prices. It is at best a passive *resultant* of conflicting and divergent tendencies, and has, to my mind, no more *causal* significance than the average of the abstract numbers of yards gained by both sides, heights and weights of players, kick-offs, and minutes taken out for injuries, would have on the result of the Yale-Harvard game. The real causes of changes in prices lie deeper! I should expect

[1] *Infra*, ch. on "Passiveness of Prices." *Weighted* averages of "person-turnovers" will not save the situation here, if incomes stop entirely, since the persons involved then drop out altogether. Moreover, *weighted* averages would clearly depend on *incomes*, and hence on *prices*, and hence could not depend on *habits* exclusively, or *causally explain* prices.

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V and V′ to be the most highly flexible factors in the equation of exchange, and should expect to be able to keep the equation straight, in a great variety of situations, by allowing the V's to vary.

Before undertaking detailed analysis of the causes governing V, I shall discuss Fisher's specific argument, typical of the quantity theory, that an increase of money cannot change the V's. "As a matter of fact, the velocities of circulation of money and deposits depend, as we have seen, on technical conditions, and bear no discoverable relation to the quantity of money in circulation. Velocity of circulation is the average rate of 'turnover,' and depends on countless individual rates of turnover. These, as we have seen, depend on individual *habits*. Each person regulates his turnover to suit his individual *convenience*. . . . In the long run, and for a large number of people, the average rate of turnover, or what amounts to the same thing, the average time money remains in the same hands, will be closely determined. It will depend on density of population, commercial *customs*, rapidity of transport, and other technical conditions, but not on the quantity of money and deposits nor on the price-level." (Italics mine.[1]) He proceeds to assume that money is doubled with a *halving* of the *V's*, instead of a *doubling* of *P*. Everybody now has on hand twice as much money *and deposits* as his convenience has taught him to keep on hand. He will then try to get rid of this surplus, and he can only do it by buying goods. But this will increase somebody else's surplus, and he will likewise try to get rid of it. This will raise prices. "*Obviously* this tendency will continue until there if found another adjustment of quantities to expenditures, and the *V's are the same as originally*." [2] The foregoing argument rests in part, it will be seen, on the

[1] *Loc. cit.*, pp. 152–153.

[2] *Ibid.*, p. 154. Italics mine.

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assumption that a fixed ratio between M and M′ obtains, else the increase of *money* in everybody's hands would not mean a corresponding increase in their *deposits*. I have already criticised this doctrine. For the contention that the V's will finally be *just the same* as before, I find no specific argument at all—"*obviously*" presumably making that unnecessary.

As the point immediately at issue is that V's will be *unchanged* by the increase in M (otherwise P would not increase *proportionately*—let us see if considerations can be adduced which will make this a little less "obvious." First, it will be noticed that Fisher, in the foregoing, in one sentence speaks of the matter as resting on *habit*, and in the next sentence, on *convenience*. He speaks, also, of business *custom*. Now it is important to note that habit and custom, on the one hand, and considerations of convenience on the other, do not necessarily coincide. Many habits and customs are highly inconvenient. And it is not at all likely that habit and custom should govern so highly complex a thing as the ratio between cash on hand and the price-level. Rather, in so far as custom and habit rule, one would expect them to relate to a simpler matter, namely, the *amount of cash on hand*. If the amount of cash kept on hand should remain controlled by habit, while the amount of money is increased, then V, instead of remaining unchanged, would actually be increased, unless the habits should be broken in on. I shall show in a moment that considerations of convenience would probably lead to a reduced V, in so far as individual turnover is concerned. But which tendency will prevail? Well, that will depend on the degree to which custom and habit rule as compared with considerations of convenience—*i. e.*, there would be no rule valid for all communities. That convenience would lead to a larger amount of money on

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hand—and I am following Fisher's temporary hypothesis that there has been no rise in prices prior to the movement to restore the V's to their old magnitudes—will appear from considerations like these. Few men have as much on hand as they would like to have, including both their cash in hand and their deposit balances. Most people have the tendency to hoard, though it is usually held in check by necessity. If money on hand be increased suddenly, without prices being increased, and without any prospect of increased incomes in the future—and there is nothing in Fisher's provisional hypothesis to call for increased incomes, as they could, in fact, come only from an increase in prices—why might not there be a considerable saving of money, with a corresponding reduction in V? If it be objected that people, in saving their money, will in considerable degree put it into the banks, and that the banks, with larger reserves, will increase loans and deposits, I would urge, that it is on the part of banks that this tendency to increase hoards in times of abundant money is particularly marked, and for proof would point to the figures quoted from Keynes[1] for the great banks and treasuries of Europe in the last fifteen years. It is not necessary for my purpose at this point to do more than show that there is reason to expect an increase in money to *change* the V's. Fisher's argument rests on the contention that the V's will be neither increased or reduced—otherwise an increase in money will not *proportionately* raise prices. The appeal to habit and custom in the matter is particularly unsatisfactory. Custom and habit could not possibly regulate things so complex as velocities of money and bank-deposits.

Whatever be the ultimate effect of an increase in money,

[1] *Supra*, ch. on "Volume of Money and Volume of Credit." *Infra*, ch. on "Bank Assets and Bank Reserves."

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the immediate effect is commonly to reduce the money-rates. Banks have less inducement to pay interest on deposits, and charge lower rates for loans. Now merchants, especially small merchants, are often embarrassed in making change for customers. The man who has tried to make payment with a ten dollar bill in a country store has not infrequently put the storekeeper to much inconvenience. To offer a ten dollar bill, or even a five dollar bill, to a storekeeper on Amsterdam Avenue in New York City may well mean that the one clerk in the establishment, or the proprietor's wife will run out with the bill to three or four neighboring stores before finding change with which to break it. If money is more abundant, if money-rates are easier, for a time, it may easily happen that many small merchants will experience the superior convenience of having a more adequate amount of change in the till, and will, even after the money-rates have risen—if they do rise again to the old figure—find a new reason for keeping more cash on hand. There is a marginal equilibrium between the interest on the capital invested in cash in the till, and the wages of the clerk,[1] whose active legs assist the velocity of money. Not only banks and small dealers, however, find it advantageous to increase their supply of ready funds, held idle for special occasions. The United States Steel Corporation has kept as much as $50,000,000.00 to $75,00,000.00 in idle cash or idle deposits, as a means of being independent of banks in times of emergency.[2] The motive for accumulating reserves and hoards, either of cash or deposit accounts, is at all times strong. In times of financial ease, it may easily find the difficulties which

[1] *Cf.* Kinley, *Money*, pp. 145 and 205–206, for the discussion of various moveable margins of this sort.

[2] Van Hise, *Concentration and Control*, p. 16. The tendency to accumulate hoards when money is plentiful is notoriously strong in countries like India.

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ordinarily repress it give way, and, by being gratified, grow stronger.

I conclude that there is positive reason for expecting an increase of money to reduce the velocity of money.

Horace White, in his *Money and Banking*, in the earlier editions, speaks of the velocity of money, "*alias* the state of trade." Is not this the truth? Is not money circulating rapidly when business is active, and slowly when business is dull? Is not the velocity of circulation a highly flexible and variable average, a *cause* of nothing, and an index of business activity? Or, better, perhaps, are not the V's and T both governed, in large degree, by more fundamental causes which are largely the same for both? Fisher would admit something of this for transition periods. Even for normal adjustments, he admits that an increase in T, unaccompanied by an increase in M, leads to some increase in the V's, though he doesn't say how much.[1] He denies, however, that an increase in the V's will increase T.[2] In general, it is clear that he regards the V's and T as governed by different causes. The control of the V's by T is not the only or the chief control of the V's. The V's can increase greatly without an increase of T, in his scheme. That this is so, will appear from a comparison of the list of causes which he gives as governing the V's and T respectively:

Causes governing V's:

1. Habits of the individual.
   (a) As to thrift and hoarding.
   (b) As to book credit.
   (c) As to use of checks.

2. Systems of payments in the community.
   (a) As to frequency of receipts and disbursements.

[1] *Loc. cit.*, pp. 167–168.

[2] *Ibid.*, p. 164.

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(b) As to regularity of receipts and disbursements.
(c) As to correspondence between times and amounts of receipts and disbursements.

3. General causes.
(a) Density of population.
(b) Rapidity of transportation.

Compare this list with the causes governing T: [1]

1. Conditions affecting producers:
Geographical differences in Natural Resources; the division of labor; knowledge of technique of production; accumulation of capital.

2. Conditions affecting consumers: the extent and variety of human wants.

3. Conditions connecting consumers and producers:
(a) Facilities for transportation.
(b) Relative freedom of trade.
(c) *Character* of monetary and banking systems. (Not their *extent*.)
(d) Business confidence.

These two lists are quite different, and indicate that in Fisher's mind the magnitudes, T and the V's, in general obey different laws. The only factor in both lists is facilities for transportation ("rapidity of transportation," in the first list). Strangely enough, T, though later recognized as having influence on the V's [2] is not included in these lists in ch. 5. The "character of the monetary and banking systems" in the second list is evidently not the same as "use of checks" in the second list, though it will doubtless affect that factor, as also the "habits as to thrift and hoarding," in some degree. "Business confidence,"

[1] *Cf.* Davenport's analysis of the causes governing volume of trade, *Economics of Enterprise*, p. 272.
[2] *Loc. cit.*, p. 110.

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which is, in the view I am maintaining, as in the view, I should take it, of Horace White, the great variable affecting both T and the V's, does not appear in the first list. Indeed, one wonders why business confidence appears in either list, if only "normal," and not merely "transitional" causes are to be considered, but it appears from the fuller discussion on p. 78 that Fisher is not thinking of business confidence as a *variable* at all—his normal theory has nothing to do with *variables*—but as a thing which either is or is not present, a sort of Mendelian unit, not a thing of degrees.[1] It will be noted, further, that most of the causes which Fisher lists as affecting T are really causes affecting *production*—they would be just as important under a socialistic as under an exchange economy.

Now I propose to show, on the basis of Fisher's own list of causes, that most, if not all, of the factors affecting the V's, will also affect T, *and in the same direction*. He admits this as to transportation facilities. It is surely true of thrift and hoarding. The miser neither circulates money nor buys goods. It is emphatically true—though Fisher's theory, as will later appear, is obliged to deny it,—of both book credit and banking facilities. Without the use of credit, much of the business now done simply would not be done at all. For Fisher, and the quantity theory in general, the contention would be simply that the same business would be done *on a lower price-level*. I reserve a full discussion of this fundamental point till later, noting here, in passing, that the function of banks is to assist in effecting transfers, that that is why, from the social standpoint, banks are encouraged, and that the extension of banking would be folly if they did not, in fact, do this. As

[1] Perhaps not quite correct, since he does recognize differences in degree as between different places, though, perhaps properly, from the standpoint of his normal theory, saying nothing about differences in degree as between different times in the same place.

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to book credit, let us suppose that, for example, in the great cotton section of the South the stores should cease to give advances of supplies on credit to negroes and small white farmers, pending the "making" of the crop. The outcome would be starvation for many of them, and no cotton crop at all. Under a system of private enterprise, the very division of labor itself, including the specialization of the capitalist, involves credit, and it is difficult to conceive a form of credit which does not either dispense with the use of money, or increase its "velocity." Admittedly, the division of labor increases trade.

The three factors listed under "Systems of payment in the community" also affect trade. To the extent that receipts are frequent, regular, and synchronous with outgo, we have a smoothly working economic system, which facilitates commerce.

Finally, density of population enormously increases trade. The concentration of men in cities is essential for modern factory production, and the great cities have necessarily grown up about good harbors, or at strategic points for connecting lines of railroads. It seems almost trivial to insist on so obvious a point, but Fisher seems totally to ignore it, for he says: "We conclude, then, that density of population and rapidity of transportation have tended to increase prices by raising velocities. *Historically this concentration of population in cities has been an important factor in raising prices in the United States.*"[1] (P. 88. Italics mine.)

This is an astounding proposition. It is not merely that the concentration of population in cities has *tended* to raise prices through raising velocities. It is a statement that this has been an important historical cause of the actual

[1] *Cf.* also p. 315, *loc. cit.*, where this is placed as one of three main causes of the historical rise in prices.

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increase in prices. For Fisher's own theory, if the same cause had tended to increase T,[1] that would have offset the rising V's on the other side of the equation, and left prices little affected. But he sees in the V's an independent cause here, divorces them from their connection with T, and follows his logic fearlessly where it leads. I do not see how one could more strikingly illustrate the essential vice of erecting the V's into causal entities.

In concluding the discussion of the rôle of velocity of circulation, I think it worth while to mention Fisher's own efforts to measure them. I examine his statistics in a later chapter. I do not regard the points at issue as points which can properly be handled by inductive methods, primarily. I do not accept his conclusions with reference to the magnitudes of V, the velocity of money, partly because I do not accept his doctrine that "banks are the home of money" (p. 287).[2] He finds for V a fairly constant magnitude during the thirteen years from 1896 to 1909, the range being from 19 to 22, the figures for all the years except 1896 and 1909 being interpolations.[3] For V′, however, which is much the more important magnitude, from the standpoint of his equation of exchange for the United States, since deposits do so much more exchanging than does money, he finds a wide range of variation, from 36 to 54, and he states: "We note that the velocity of circulation has increased 50% in thirteen years and that it has been subject to great variation from year to year. In 1899 and 1906 it reached maxima, immediately preceding crises" (285). I think Fisher's own statistical results

[1] That the overwhelming bulk of trade is in the cities will appear in our chapter, *infra*, on "Volume of Money and Volume of Trades."

[2] On the average, in the United States, the banks have less money than the people have. *Vide* Mitchell, *Business Cycles*, pp. 295 and 298.

[3] Based on arbitrary assumptions as to variability. *Cf.* his p. 477. *Cf.* our chapter, *infra*, on "Statistics of the Quantity Theory."

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show that V′, at least, is a child of the "state of trade." [1] Critical analysis of these statistics show that they greatly underestimate the variability of the V's.[2]

In summary: V and V′ are not, as Fisher contends, independent of the quantity of money. Instead of resting on "technical conditions," and having large elements of constancy and rigidity, they are highly flexible, and vary, on the whole, with the same highly complex and divergent sets of causes which govern the volume of trade. The biggest factor affecting the variations of the V's on the one hand, and volume of trade on the other is business confidence—a factor which Fisher's normal theory is not concerned with, so far as it is considered as a variable, but which, more than anything else, does affect the concrete figures which go into the equation of exchange, either for a single year, or for an average of a good many years. The V's are not true causal entities, but merely abstract summaries of a host of heterogeneous facts. I have indicated before, and shall later demonstrate more fully, that the same is true of T. Even the "normal" causes governing the V's, however, are factors which likewise affect T, and in the same direction.

Among the factors affecting both V and T, there is one which sometimes makes them move in opposite directions, and that is the *value of money* itself. This is so well stated in Wicksteed's interesting criticism of the quantity theory that I content myself with a quotation: [3] "Again, the his-

[1] Other passages might be cited to show that Fisher thinks that T and the V's are fundamentally governed by different causes. For example, he says "an increased trade in the Southern States, where the velocity of circulation of money is presumably slow, would tend to lower the average velocity in the United States, simply by giving more weight to the velocity in the slower portions of the country." *Loc. cit.*, p. 166.

[2] *Cf.*, *infra*, our chapter on "Statistical Demonstrations of the Quantity Theory."

[3] *Common Sense of Political Economy*, p. 623.

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tory of paper money abounds in instances of sudden changes, within the country itself, in the value of paper currency, caused by reports unfavorable to the country's credit. The value of the currency was lowered in these cases by a doubt as to whether the Government would be permanently stable and would be in a position to honor its drafts, that is to say, whether this day three months, the persons who have the power to take my goods for public purposes will accept a draft of the present Government in lieu of payment. It is not easy to see how, on the theory of the quantity law, such a report could affect very rapidly the magnitudes on which the value of the note is supposed to depend, viz., the quantity of business to be transacted, and the amount of the currency. Nor is it easy to see why we should suppose that the frequency with which the notes pass from hand to hand, is independently fixed. On the other hand, the quantity of business done by the notes, as distinct from the quantity of business done altogether, and the rapidity of the circulation of the notes may obviously be affected by sinister rumors. Two of the quantities, then, supposed to determine the value of the unit of circulation, are themselves liable to be determined by it."

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CHAPTER XIII

THE VOLUME OF MONEY AND THE VOLUME OF TRADE—TRADE AND SPECULATION

In proving that an increase of money must proportionately increase prices, it is necessary to prove that the volume of trade is independent of the quantity of money and credit instruments by means of which trade is carried on. Money on the one hand, and quantity of goods to be exchanged on the other, are the two great independent magnitudes, whose equilibration mechanically fixes the average of prices. This notion, as to the essence of the quantity theory, finds expression in Taussig,[1] "The statement of a quantity theory in relation to prices assumes two independent variables: total money or purchasing power on the one hand, total supply of goods or volume of transactions on the other." Taussig, though he would maintain that this independence holds, so far as money and trade are concerned, admits that it breaks down so far as trade and elastic bank credit, bank-notes and deposits, are concerned. Trade and elastic bank-credit are largely *inter*dependent.[2] This concession on Taussig's part means virtually giving up the quantity theory for Western Europe and the United States and Canada, though Taussig still sees something left of the quantity theory tendency in view of the "irregular and uncertain" connection which he finds between money and bank-credit.[3] Fisher, however, makes no such

[1] *Principles*, I, 432.

[2] *Loc. cit.*, pp. 432, 438–439.

[3] *Ibid.*, p. 439. *Cf.* our chapter, *supra*, on "Volume of Money and Volume of Credit," where Taussig's view as to the relation of money and bank-credit is analyzed.

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surrender. He is quite as uncompromising as to the independence of *deposits* and trade as he is with reference to the independence of *money* and trade. He does, indeed, make the concession that increasing trade tends to increase deposits *indirectly*, by increasing the ratio of M′ to M, by modifying the habits of the people as to the use of checks as compared with cash (p. 165),[1] but he denies stoutly that there is any *direct* relation between them. (P. 168.) Trade acts only *via* a modification of the ratio between M and M′, and M still remains controlled, not by trade, but by quantity of money. As to any control over T by M′, he repudiates it explicitly, (P. 163.) Increasing M′, either through an increase of M. or through an increase in the normal ratio between M and M′, will have no effect on T,—or, for that matter, on the V's. The introduction of credit, therefore, leaves the quantity theory intact: an increase of M, increasing M′ proportionately, leaving the V's unchanged, and having no effect on T, must exhaust its influence on P, raising P proportionately, if the equation of exchange is to remain valid.

The argument set forth to prove that T is not influenced by M or M′ is as follows: "An inflation of the currency cannot increase the products of farms or factories, nor the speed of freight trains or ships. The stream of business depends on natural resources and technical conditions, not on the quantity of money. The whole machinery of production, transportation and sale is a matter of *physical capacities and technique*, none of which depend on the quantity of money. The only way in which quantities of trade appear to be affected by the quantity of money is by influencing trades accessory to the creation of money and to the money metal. . . . From a practical or statistical

[1] *Loc. cit.*

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point of view they amount to nothing, for they could not add to nor subtract one-tenth of 1% from the general aggregate of trade." (*Loc. cit.* p. 155. Italics mine.) Something similar is said on p. 62, where "transitional" influences of M on T are being discussed: "But the amount of trade is dependent, *almost entirely*, on other things than the quantity of currency, so that an increase of currency cannot, *even temporarily*, very greatly increase trade. In ordinarily good times practically the whole community is engaged in labor, producing, transporting, and exchanging goods. The increase of currency of a "boom" period cannot, of itself, increase the population, extend invention, or increase the efficiency of labor.[1] These factors pretty definitely limit the amount of trade that can reasonably be carried on. So, although the gains of the enterpriser-borrower may exert a psychological stimulus on trade, though a few unemployed may be employed, and some others in a few lines induced to work overtime, and although there may be some additional buying and selling which is speculative, *yet almost the entire effect* of an increase in deposits must be seen in a change in prices. Normally the *entire* effect would so express itself, but transitionally there will be also *some* increase in the Q's." (Pp. 62–63. Italics mine.)

Fisher is here exceedingly uncompromising, even where transitional periods are concerned, and it is not necessary, in order to do his position full justice, to make much distinction between "normal" and "transitional" effects in my counter-argument. I shall, however, take account of the

[1] Virtually the same expression is to be found in Barbour, David, *The Standard of Value*, London, 1912, p. 43. Barbour denies vigorously that more money can increase business, since it cannot increase the number of laborers, or of machines, or the amount of food, etc. The doctrine that volume of trade is fixed by (1) volume of products, and (2) degree of specialization of production, and hence is independent of volume of money, appears in Davenport, *Econ. of Enterprise*, 271–273.

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distinction as I proceed, in justice to other, more moderate, quantity theorists.

It is a familiar doctrine that the quantity of money is irrelevant, that things go on in much the same way whether money is abundant or scarce, the only difference being that in the one case prices are high and in the other, low; that, in particular, it is a gross fallacy to connect the rate of interest with the amount of money, since (as many writers would put it) the rate of interest depends on the amount of *capital* rather than *money*. At the opposite extreme, we have writers like Brooks Adams (*Law of Civilization and Decay*), who see the fate of nations and the progress of civilization resting on the abundance or scarcity of money. Fisher takes the first position in its extremest form.[1]

The truth, I think, is intermediate. The effects of the New World discoveries of gold and silver after the voyage of Columbus on trade and industry were tremendous. Trade was enormously increased. Walker, in his *Inter-*

[1] In this view, Fisher typifies the general position of the quantity theory, and, indeed, in part even of those who do not agree with the quantity theory, but who, with the quantity theorists, view the problems of money and banking as matters of static theory. High or low prices, once the transition is made, exhaust the effects of increasing or decreasing the money supply. During the period of transition, certain readjustments in relations between creditors and debtors arise, which lead to either temporary prosperity or temporary distress, but after the transition, it is a matter of indifference whether or not money is abundant. Though the view is, logically, an essential part of quantity theory reasoning, we find much of it vigorously maintained by Laughlin, *Principles of Money*, ch. on "Amount of Money Needed by a Country." Laughlin and Fisher would seem to be at one in maintaining that the quantity of money in a country is a matter of indifference, and from the views of both would follow a condemnation of the idea that any long run consequences for volume of trade, efficiency of production, etc., could follow from increasing or decreasing the volume of money.

It may be just as well here to indicate the conviction of the present writer that the relation between the quantity theory and the bimetallic movement is historical rather than logical. Indeed, in laying the stress they did on the importance of an inadequate stock of money in accounting for the depression of the latter part of the 19th Century, the bimetallists were out of harmony with the quantity theory.

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national Bimetallism,[1] asking, from the standpoint of a quantity theorist, why prices only increased 200% while money increased 470%, admits that the chief reason was the increase in trade, due in large part to the very increase in money itself. Sombart, in his *Der Moderne Kapitalismus*,[2] finds in this influx of money a tremendous source of capitalistic accumulations, (a) for the Conquistadores, (b) for the handicraftsmen whose prices rose faster than their costs, (c) for tenants whose rents were fixed in money, (d) for landowners, whose rents were fixed in kind [a point not obviously true], and (e) for bankers, as the Fugger. An increase of capital, savings that would otherwise not have been made, must have profoundly modified the whole industrial system, and greatly increased both industry and commerce. If it be objected that effects of this sort are not usual, that they came in a world which had been starved for money, and which, by means of the enormous increase in money was able to pass from a "natural" to a money economy, I reply that the difference between such a case and the usual effects of an increase of money are in degree rather than in kind. The world of Columbus' day was in part on a money economy, and the world to-day, despite Professor Fisher's emphatic denial,[3] still employs a great deal of barter, or equivalents of barter. I shall revert to this point later. But even this consideration would not rob Sombart's points of their significance for modern conditions. Further, we have an even more striking case, on Walker's own showing, in the effects of the Californian and Australian [4] gold discoveries

[1] P. 50.

[2] Pp. 358–372, vol. I.

[3] *Loc. cit.*, p. 160. *Cf.* our chapter on "Barter."

[4] The fact that prices are often high in gold mining regions, as compared with prices in the general world markets, has been taken by many writers as proof of the quantity theory. *Cf.* Kemmerer, *Money and Credit Instruments*, pp. 50–51, 58; Cairnes, J. E., *Essays in Political Economy*, particu-

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in the 19th Century on trade, industry, and speculation.[1]

Nor is the tremendous agitation over bimetallism, involving a literature so great that no man could dream of reading it all, involving great political movements, Presidential campaigns, great Congressional debates, repeated legislation, international conferences, etc., for twenty years, to be explained on any other ground than that the world felt practical, important, and unpleasant effects on industry and trade from the inadequacy of the money supply.

The view of Hartley Withers [2] is interesting here. He says: "any such great addition to currency and credit would have a great effect in stimulating production, and so would lead to a great addition to the number of real goods which humanity desires and consumes when it can get them. . . . Trade would be more active." On p. 23 he speaks of the enormous expansion of trade made possible by paper representatives of gold. On p. 83 he speaks of the attitude of the money-market toward gold, which

larly the discussion of the Australian episode. It seems to me that this is particularly inconclusive. High prices characterize remote mining regions of all kinds, whether gold, silver, copper, diamonds, tin or what not be the quest. Prices are not lower in the tin and copper region in the northern part of the Seward Peninsula in Alaska than they are in the gold region about Nome in the southern part of that peninsula. They are high in both places, not because of the abundance of gold or of money, but because of the great value of goods, which have to be brought with great trouble and expense from the United States. They are higher in the region of the Saw Tooth Mountains, in the centre of this peninsula, where hydro-electric power for the use of the gold miners about Nome, and for the copper and tin mines further north, is being developed, than they are at Nome itself, on the coast, where the gold is being mined. They were high in Australia because the discovery of gold led everybody to abandon everything but gold mining, and to bring in virtually everything from a distance. Wooden beams were imported to Australia from Sweden! (Pierson, N. G., *Principles of Economics*, I, p. 389.) One would expect prices in gold money to be higher in a silver or copper mining region, which is prospering, than in a gold mining region, equally remote, where a great deal of gold is being mined, but at a cost too great to make the region prosperous.

[1] *Loc. cit.*, p. 51.

[2] *Meaning of Money*, p. 18.

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the orthodox economist is apt to think of as a survival of Mercantilism. Withers thinks that the money market is right in a large degree.

As illustrating Withers' statement about the views of "practical men" on this point, the following extract from a recent address by Theodore Price, quoted with approval in a "market letter," written by Byron W. Holt,[1] is interesting: "The fact seems to be that the exigencies of war in Europe are leading to an extension of credit such as would not have been possible in peace, because the hesitant conservatism of bankers would have then prevented it, and we are finding that instead of working harm it is doing good, because huge masses of fixed capital are thereby made productive, and are circulating with the increased velocity that always quickens enterprise and accelerates the wheels of industry. . . . All the precedents of history indicate that accelerated activity will come with peace and continue until the exuberance of success has led men to build faster than the world has grown and to demand credit upon the basis of future rather than of present values."

What is the essential causation in the matter? Well, viewed merely as a matter of mechanical equilibration, the quantity theory view is not strictly true, by any means. For a given country—and Fisher's quantity theory is always a theory for a given country, and, indeed, for any separate market, even a single city [2]—an increase of banking credit means an increase in non-monetary capital, because, to a greater or less extent it dispenses with the use of gold, which goes abroad, bringing back wealth in other forms in exchange. Adam Smith saw this clearly,

[1] Price's address before Western Econ. Asso'n, Nov. 26, 1915; Holt's letter, Dec. 2.

[2] *Loc. cit.*, p. 172.

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and phrased it strikingly, likening gold and silver coins to the wagon-roads of Scotland, which are necessary for transportation, but which none the less prevent the use of the roadways for raising grain; whereas bank credit is like a wagon-road through the air, which restores the roadbeds to cultivation. Increased non-monetary capital, other things equal, should mean increased trade.

But, more fundamentally, an increase in gold itself within the country, if not bought by the export of an equivalent amount of other goods, *is an increase of capital.* Not all capital is money, but standard coin is capital. Money is a tool of exchange, and exchange is part of the productive process. More money means more exchanging. That is what money is for. Part of the mechanism is in the money rates, which go down as money becomes more abundant, making it profitable to effect exchanges which would not have been profitable had the money rates been higher. Granted that the money-rates and the general rate of interest tend, in the long run, to keep—I will not say at the same figure [1]—a certain fairly definite relation to one another, it still does not follow that the new "normal" equilibrium will give us an interest rate which is the same as the general rate of interest was before the influx of gold. On the strictest static theory, this is not to be expected. Because the total amount of capital in the country is increased, and this means a lowered interest rate all around, in the marginal employment of capital. The margin of the use of capital will be lowered everywhere, including the margin for the use of money. This means permanently lowered money rates in the country, even though the permanent level be higher than the initial

[1] See our discussion of "money rates" and "interest rates," *supra*, in the chapter on "Capitalization," and *infra*, in the chapters on "The Functions of Money," and on "Credit."

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money rates immediately following the access of new gold. I have put the argument in terms that suggest the productivity theory of interest, because it is more simply stated that way. I do not accept the productivity theory, as a fundamental explanation of interest, but for many purposes, the results to be obtained by it coincide with the psychological time theories,—which also, in their present form, seem to me imperfectly developed. I need not try to construct a theory of interest here, however, as the familiar theories lead to no trouble at this point. It is enough to point out that the increased amount of capital, meaning better provision for present wants—wants concerned with gold in the arts and with money for productive exchanges, as well as goods generally since part of the new gold will be exported for other things—will lessen the pressure of present as compared with future wants, and so lessen the rate of interest on the time-preference theory. The final outcome will be an extension of the marginal use of money, and a greater volume of exchanges. Of course, the increase in the supply of any kind of capital good, apart from a prior increase in the demand for its services, will, on the mechanical view of economic causation, necessarily lead to some fall in its capital value. Gold money will be no exception to this rule. As to how much the increase in its quantity will lead its capital value to fall, however, we are unable to say. For the quantity theory, the fall will be in proportion to the increase. For the theory just outlined, the fall will depend on the elasticity of demand for gold in the arts, and on the elasticity of "demand" for money, meaning by demand for money simply the demand for the short-time use of money as a tool of exchange, a demand which governs *directly*, not the capital value of money, but rather the "money-rates." The relation between the money rates and the capital value of money will

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best be discussed at another point.[1] We have no reason at all to suppose that either of these demands [2] exhibits the tendency to obey the law of proportional variation which the quantity theory requires of money.

It is further important to note that as a country gets more abundant capital, there seems to be a tendency to extend the use of money rather more than the use of many other capital goods. Where the interest rate is 10 and 12%, as in Arizona and New Mexico, money, even when brought in, tends to leave in large degree to bring in other forms of capital which the situation calls for more imperatively. The early American colonies, needing money pressingly, and making shift with a great variety of substitutes for good metallic money, thoroughly acquainted with the advantages of a money-economy from their European experience, and having "habits" as to the carrying and using of money which they had brought with them from Europe, still found it impossible to keep a great deal of metallic money, in view of the still greater importance of other forms of capital. It is in the most highly developed commercial communities, commercial centres, and *par excellence*, in the speculative centres, that the demand for the money-service is most elastic.[3] A country where the rate of interest is low, loses other forms of capital, and gains money, in the process of reëquilibration, as compared with a new and undeveloped section, although the new section also extends the margin of the money service, in effecting a greater number of exchanges, when money is increased.

And this leads to a vital distinction, which quantity theorists almost always lose: the distinction between the volume

[1] *Infra*, chapter on "Functions of Money," and *supra*, chapters on "Capitalization" and "Dodo-Bones."

[2] *Cf.* our chapters on "Supply and Demand," and "The Origin of Money."

[3] New York City can always use idle funds, "at a price."

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of *production*, and the volume of *trade*. Even in the mechanical system of causation which they describe, it is true only of production and transportation that *technical* and *physical*[1] factors are of primary significance, and that money is of minor significance. For trade and commerce, money is always highly important. To the extent that a region is primarily given over to the primary productive activities, mining, and agriculture, such trading as is necessary can be done by means of a small amount of money, supplemented by barter and long-time book-credit. A region or a city whose chief business is *commerce*, however, needs a large part of its capital in the form of money, and of banking capital, which is largely invested in money for banking reserves. *Trade*, as distinguished from industry (and it is after all trade that is under discussion), is helped or hindered as its tools are more or less abundant. These considerations would suggest that the elasticity of the demand for the use of money is greater than the elasticity of demand for the use of capital in almost any other form. Production is, indeed, limited by labor supply and natural resources, in considerable degree. *Trade*,[2] however, even from the standpoint of mechanical causation, is limited chiefly by the relation between the profits to be made in commercial transactions, and the "price" that must be paid for the money and credit that are required to put them through. There are enormous numbers of transfers that could be made to advantage if there were no cost at all involved. They are not made, because exchanging requires pecuniary capital. Let the pecuniary capital in-

[1] Kemmerer, as well as Fisher, allows physical production and consumption to dominate his "index" of trade variation. *Loc. cit.*, pp. 130–131; Fisher, *loc. cit.*, p. 479. *Cf.* our discussion of their statistics, *infra*.

[2] This confusion of volume of trade and volume of production is a companion of the confusion discussed on p. 307, *infra*, of quantity of money with volume of money-*income*. The two confusions, found in virtually all expositions of the quantity theory, give it most of its plausibility.

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crease, however, and sub-marginal exchanges become worth while, the general margin is lowered. Commerce is the most highly flexible and elastic portion of the whole productive process. The elasticity of demand for commercial capital is, thus, greater than the elasticity of demand for any other form of capital.

How widely the volume of trade differs from the volume of production, and how great is the element of speculative transactions in trade, will best appear, I think, from an analysis of the figures which Fisher gives [1] for the volume of trade in the United States. His figure for the volume of trade in the year 1909 is $387,000,000,000.00, three hundred and eighty-seven billions of dollars! This figure is reached by equating the figures he has reached for MV plus M′V′ to PT, and assuming P to be one dollar, by making the "unit" of T, arbitrarily, a dollar's worth of each sort of commodity, at the prices of 1909. I have already commented on the legitimacy of this method of summarizing T,[2] and need not say more here, beyond calling attention to the fact that "volume of trade," as commonly used, does in fact mean, not T alone, but PT. Fisher for years other than 1909, however, makes use of a different method of getting at T: he takes certain indicia of *relative* amounts of trade, compares them with the same indicia for 1909, and estimates the trade for other years as being such a percentage of the trade for 1909 as their indicia are of the indicia of 1909. The indicia chosen are: (1) quantities of certain commodities, cotton, fruit, cattle, etc., *received at* principal cities of the United States, taken as typical of the variations of the internal *commerce* of the United States; (2) quantities of 23 articles of import and 25 articles of export, for each year, taken as typical of varia-

[1] *Loc. cit.*, ch. 12, and appendix to ch. 12.
[2] *Supra*, ch. on "Equation of Exchange."

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tions in the foreign trade of the United States; (3) sales of stocks. These three indicia, weighted in a manner to be described in a moment, are then averaged. There is a second element in the index, made up by taking the figures for railroad *tonnage*, and the figures for *receipts on first class mail*, which are averaged. The first average and the second average are then combined into a third average, which is the final index. The relation between this index for every year other than 1909 and the same index for the year 1909 determines the amount of T for each year—the two indicia, together with the figure, $387,000,000,000.00, giving the required amount by the "rule of three." I shall not go into details with the method of constructing these averages, but I wish to make clear the comparative *weight* given to each element in the final index: The first three elements count *twice* as heavily as the last two, and so constitute the biggest factor. In the first average, based on the first three elements, the item taken as typical of internal trade is *weighted by 20*, the item taken as typical of foreign trade is *weighted by* 3, and sale of stocks *by 1*. It appears from Fisher's figures (p. 479), that the one really big *variable* among all the indicia is the sale of stocks, but the weight given it is so small that it makes virtually no difference in the final result. Thus, as between 1898 and 1899, stock sales increased over 50%, but total trade, as shown by Fisher, increased only 5%. In the following year, stock sales *decreased* over 21%, but total trade, on Fisher's figures, *increased*. The following year, 1901, stock sales virtually doubled, but Fisher's final figure shows only an increase around 13%. Two years later, in 1903, stock sales fell off about 40%, from the figures for 1901, but again, as compared with 1901, total trade on Fisher's figures shows an appreciable gain. The influence of stock sales on Fisher's index is, virtually, negligible. The dominating factor is the

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receipts of selected staples, cattle, cotton, rice, pig iron, etc., in the principal cities of the United States. There is not a *single year* in which his final figure for T does not move in harmony with this factor (p. 479). He gets, thus, for the volume of trade through the fourteen years under consideration, a surprising steadiness, and a pretty uniform progressive development.

In defence [1] of his method of weighting, Fisher says, simply: "These weights are, of course, merely matters of opinion, but, as is well known, *wide differences in systems of weighting make only slight differences in the final averages*." (Italics mine.)[2]

Are these figures valid? Well, first one is struck with the absolute magnitude assigned to T. The figures seem vastly greater than would have been anticipated. The method of calculating it, for 1909, I shall discuss in detail in the chapter on "Statistical Demonstrations of the Quantity Theory." For the present, it is enough to note that the absolute magnitude is derived from figures col-

[1] In a letter to the writer, Professor Fisher states that the figures for the physical receipts at the cities, which dominate his index for T, have not been available for recent years, and that since they were discontinued, he has relied chiefly on the indirect calculation of T *via* the other factors in the equation. These figures were discontinued in 1912. In the *American Economic Review* for June, 1916 (p. 457, n.) Professor Fisher states that the indirect calculation of T has always had more weight in his figures than the direct calculation. This would serve in some degree to lessen the errors of his index of variation. The extent to which he has allowed his T as directly calculated on the basis of the index to be modified by the indirect calculation, is indicated on p. 302 of the *Purchasing Power of Money*, as follows: "The alterations in T, as shown in Figure 16, though still greater than the preceding, are nevertheless so small and uniform as to preserve an almost perfect parallelism between the original and the altered curve. The differences rarely exceed 10%." Even an indirect calculation of T, however, would not avoid the criticisms here urged, since the other factors, MV, M'V', and P are all, as we shall see in the chapter on "Statistical Demonstrations of the Quantity Theory," calculated by methods which give very excessive weight to trade outside New York City and to non-speculative transactions.

[2] *Loc. cit.*, p. 485.

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lected by Dean David Kinley for the National Monetary Commission,[1] of deposits, exclusive of deposits made by one bank in another, made in about 12,000 banks (out of 25,000) on March 16, 1909. These deposits were classified as (1) money (with subdivisions) and (2) checks and other credit instruments. A cross-classification divided them into (1) retail deposits; (2) wholesale deposits; (3) all other deposits. Kinley's object was to determine the extent to which checks are used, as compared with money, in payments, particularly in wholesale and retail business. Fisher's total, briefly, was obtained as follows: Kinley's figures, for the one day, were increased to make an allowance for the non-reporting banks; they were further increased on the assumption that March 16 was below the average for the year; the figure finally obtained for the day was then multiplied by 303, assumed as the number of banking days in the year, and the product, 399 billions, was taken as representing the total circulation of money and checks in trade. For some reason not made clear, this total was subsequently reduced to 387 billions. Counting the average price, P, as $1, T was considered to be 387 billions.[2]

In the statistical chapter to follow, it will be shown that this estimate is a very decided exaggeration. Deposits made in banks greatly overcount trade. Very many payments represent duplications, loans and repayments, taxes, etc., and are in no sense trade. This is true of all classes of deposits, wholesale and retail, as well as "all other."

[1] *The Use of Credit Instruments in Payments*, Senate Document No. 399, 61st Congress, 2nd Session.

[2] This brief account will be amplified for critical discussion in the statistical chapter below. Fisher in fact calculated MV and M′V′ separately. The account above given is strictly accurate only for that part of T, 353 billions, which is carried on by means of checks. The calculation of MV, however, is also based on Kinley's figures. My account here is adequate for the question at issue, which is, not as to the absolute magnitude of trade, but rather, as to the *proportions* of speculation and other elements in trade.

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But for the present, I am concerned with the question, not of the absolute magnitude of the volume of trade, but rather, the questions of its character, of the elements that enter into it, and, above all, of the extent to which it is physically determined by technical conditions of production, and the extent to which it is flexible, a matter of speculation, etc.

We may approach this question from the angle of several bodies of statistical information. First, the question may be raised: what is there in the country which could be bought and sold enough in the course of a year to give us anything like so great a total? The subtractions which we shall find it necessary to make will still leave us an enormous total.

The United States Census Bureau [1] in 1904 reached the conclusion that the *total wealth* of the country was only $107,000,000,000. Of this, over $62,000,000,000 was in real estate; $11,000,000,000 in railroads; street railways, over $2,000,000,000; telephone, telegraph, water and light, and similar enterprises total nearly $3,000,000,000 more. None of these things enter into ordinary wholesale and retail trade. The items that one would ordinarily think of are agricultural products, $1,900,000,000; manufactured products, $7,400,000,000; mining products, $400,000,000. Can these things be exchanged often enough in the course of a year to account for $387,000,000,000!

These figures are for 1904,[2] whereas Fisher's figures are

[1] The substance of the argument here presented first appeared in articles in the *Annalist*, to which I am indebted for permission to use it here. See the numbers of Feb. 7, March 6, and March 20, 1916. Professor Fisher's replies, directed wholly against the charge of double counting, appeared in the *Annalist* of Feb. 21 and March 13, 1916. Professor Fisher does not question my contention that speculation makes up the overwhelming bulk of trade, in these replies. He rather seeks to meet the charge of overcounting by holding that bank-transactions do not fully count speculation! This he thinks particularly true of stock exchange transactions. *Cf.* his article of Feb. 21, 1916.

[2] The Census Bureau figures have been subject to a good deal of criticism, and I therefore refrain from trying to draw precise conclusions from them.

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for 1909. If the Census Bureau had taken an inventory in 1909, the figures would doubtless be larger. The inventory for 1912 made by the Census Bureau does show a very considerable increase, the largest item being due to a rise in real estate values. The figures for agricultural, manufacturing, and mining products are, also, figures for a given time rather than for total production through the year. But, making all the allowance one pleases, it is quite incredible that one should reach a figure of $387,000,000,000 by taking only the exchanges necessary to bring raw materials through the various stages of production to the consumer. The greater part of the $387,000,000,000 is to be explained in another way!

A detailed analysis of Kinley's figures, on which the estimate of total trade is based, leads clearly to the same conclusion. Kinley's figures for the banks that reported on March 16, 1909, are as follows:

Retail deposits	60 millions
Wholesale deposits	124 millions
"All other" deposits	502 millions

The "all other deposits" are vastly greater than retail and wholesale deposits combined! Notice, too, with reference to the question as to how often goods need to be turned over in getting to the consumer: wholesale trade uses only about twice as much money and checks as does retail trade. Goods are not, if these figures are in any way typical of actual trade, turned over many times in the process of reaching the consumer. The "necessary," or "physically determined" number of exchanges, in the routine of trade, is small, per item.

Retail deposits of 60 millions make up less than one-eleventh of the total. Retail and wholesale deposits together make up about three-elevenths. What is the other eight-

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elevenths, represented by the "all other deposits"? It will help if we see where these "all other" deposits are located. If we find them scattered evenly throughout the country, in rural regions as well as in cities, we might be at a loss. If, however, we find them bunched in the big speculative centres, we may conclude that speculation accounts for a large part of them. We do in fact find this.

The following figures show the different classes of deposits (1) in the South Atlantic States; (2) in reserve cities; (3) in New York City alone:

		Per Cent.
South Atlantic States:		
Retail deposits	$ 3,300,000	19.0
Wholesale deposits	4,900,000	29.0
"All other" deposits	8,900,000	52.0
Reserve Cities (including New York City):		
Retail deposits	$ 24,000,000	5.6
Wholesale deposits	78,000,000	18.2
"All other" deposits	326,000,000	76.1
New York City:		
Retail deposits	9,000,000	3.7
Wholesale deposits	34,000,000	14.0
"All other" deposits	198,000,000	82.2

It is difficult, with Kinley's figures, to get figures which exclude returns from cities of substantial size, except for a State like Nevada, where the mining and divorce industries complicate the figures. As near an approach as can be made, perhaps, is to take the State of Louisiana, excluding New Orleans from the totals. Even here, however, we include five cities of over ten thousand, among them Shrevesport, with 28,000 people. The following figures are for the State and national banks in Louisiana, exclusive of New Orleans:

Retail deposits	$179,915	24.1
Wholesale deposits	246,647	33.1
"All other" deposits	318,915	42.8

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We cannot tell, in these figures for Louisiana, how many banks are represented, or what the average figures per bank are. For the whole State of Arkansas, however, including five cities of over 10,000, with two over 20,000, and one of 45,000, we can get an average for ninety reporting banks. Even here we do not know where these banks are located within the State, though it is probable that they are in the larger places, and so exceed the average deposits for the banks in the State as a whole, to say nothing of the average for the smaller places. The ninety banks are almost wholly State and national banks.

Arkansas:		*Per Cent.*
Retail deposits	$232,017	25+
Wholesale deposits	231,614	25+
"All other" deposits	456,544	49+

The average for all deposits, per bank, in Arkansas is $10,224; the average for all the 11,492 banks reporting for the whole country is, approximately, $60,000; the average for the 659 banks reporting from New York State is $502,136; the average for the banks in New York City alone is doubtless much higher, but cannot be stated, as Kinley's figures do not tell how many banks reported by cities.[1]

The "all other deposits" in Arkansas are 27.8% cash, and 72.2% checks; the "all other" deposits in the country as a whole are only 4.1% cash, with 95.9% checks; the "all other deposits" of New York City are only 1% cash, with 98.9% checks.

Several facts are very clear from these comparisons: (1) the proportion of "all other deposits" increases very rapidly as we get closer to the great centres of speculation,

[1] The figures showing the number of banks reporting from each State, together with the number of reports rejected, will be found on pp. 47–49 of his monograph. The figures above are combinations of figures from his various tables. These tables are so carefully indexed in Dean Kinley's monograph that detailed page references are unnecessary here.

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and is lowest in rural regions; (2) the great bulk of all the deposits is in the cities. The average for Arkansas banks, for example, is only one-sixth the average of the whole country, and is only one-fiftieth the average for the banks of New York State. It is a much smaller fraction of the average for New York City, but we cannot give an exact figure. The totals reported from the rural regions are trifling, as compared with the totals reported from the big cities. This, as will be made clear in the chapter on "Statistical Demonstrations of the Quantity Theory," is not because the country reports were less complete that the city reports. New York was probably less complete than the country as a whole. It is simply because the activity of country accounts is small, the amount of trading in the country districts small, and (as shown) the *average* for country banks is small. (3) The character of the "all other" deposits in Arkansas differs substantially from that of the "all other" deposits in New York City, as indicated by the fact that the proportion of cash is high in Arkansas —substantially higher, in fact, for the "all other" deposits in Arkansas than for all deposits, or even for retail deposits, in the country as a whole. The percentage of checks in total retail deposits in the United States, in Kinley's figures, was 73.2; the percentage of checks in the "all other" deposits in Arkansas was 72.2. We may count these Arkansas "all other" deposits as, in considerable degree, deposits made by farmers. What were the "all other deposits" made in New York City?

Dean Kinley's list of the miscellaneous elements that enter into the "all other deposits," given on p. 151, contains only two that might be expected to bulk large in New York without appearing in Arkansas. These are: *brokers, and stock and bond financial corporations.* Of course, theatres, hotels, publishing houses, railroads, public funds,

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"those who have no specific business," and rich churches, will all be absolutely much larger in New York City than in Arkansas. But these things may be found in many places, scattered throughout the cities of the country, without making anything like such "all other" deposits as New York shows. It is not New York's foreign commerce that does it, because that is represented in New York's "wholesale deposits," which make up only 14% of New York City's total deposits for the day. It cannot be the supposed "clearing house" function of New York City,[1] whereby banks in different parts of the country pay their balances due one another in New York exchange, because such transactions would appear in New York chiefly in the figures for deposits made by one bank in another, and these figures are excluded from Kinley's totals. It cannot be the deposits of the "idle rich" for current expenses that swell New York's "all other deposits" so greatly—these could not equal the total retail deposits of the city, which are only 3.7% of the total in New York. Moreover, similar deposits are made in many other cities, without, in proportion to population, making any such totals. Figures, moreover, for the aggregate yearly income of the United States, and for the distribution of that income between rich and poor, make it clear that any such items must be bagatelles in comparison with these enormous figures. The only explanation that will really explain is the speculative and investment and financial transactions that centre in New York, and, in less degree, in the other great financial cities of the country.

This is Dean Kinley's opinion. In the "all other" deposits he makes a 50% allowance for speculative transactions. "A large proportion of deposits in this 'all others' class undoubtedly represents speculative transactions, all

[1] *Cf.* our discussion of this topic in the statistical chapter, *infra*.

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of which, or practically all of which, are settled with credit paper."[1] It is also the opinion of General Francis A. Walker, expressed concerning similar figures from earlier inquiries.[2]

Various kinds of evidence converge toward this conclusion. Thus, the evidence of clearings, total items presented by banks to the clearing houses of the country. New York clearings are usually nearly twice as great as total clearings for the rest of the country. New York clearings fluctuate in general harmony with transactions on the New York Stock Exchange. This has been commented on many times. The extent to which it holds has recently been carefully measured by Mr. N. J. Silberling, whose results appear in the *Annalist* for August 14, 1916, under the title, "The Mystery of Clearings." Mr. Silberling applies the "coefficient of correlation" to the problem, getting in one significant figure a measure of the extent to which two variables, as share sales on the New York Stock Exchange and New York clearings, vary together. This coefficient has been used enough by economists not to require detailed explanation here. It is a figure always between + 1 and — 1. + 1 indicates that the two variables in question are perfectly correlated, whereas 0 indicates no correlation whatever. — 1 indicates an inverse correlation, such that two variables vary exactly and inversely with reference to one another.[3]

[1] *Loc. cit.*, pp. 153–154.

[2] *Discussions in Economics and Statistics*, 1, 204. Quoted by Kinley, *loc. cit.*, 152.

[3] The coefficient of correlation has been developed by the biologists, chiefly Karl Pearson, but has been applied to problems in many fields, especially economics, sociology, psychology, and education. A good source is Yule's *Introduction to the Theory of Statistics*. Professor H. L. Moore has made extensive use of the method in his *Laws of Wages*, and his *Economic Cycles*.

Connected with the coefficient of correlation, usually, is a figure for "probable error," which depends, primarily, on the square root of the number of observations. When the probable error is low, and the coefficient of

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Mr Silberling's studies show the following correlations: New York share sales (numbers of shares, not values) to New York clearings, using weekly figures, for the years 1909–10, r = .628. This is a high correlation. Limiting the observations to the middle weeks of the month for the same period, he gets r = .731(46). The reason for taking only middle weeks in the month is that thereby the disturbing factor of monthly settlements is avoided. The monthly settlements may be for stock transactions, or may be for other things, but as they are not dependent on the stock transactions *of the week* in which they occur, their

correlation high (as .8), it is commonly supposed that a very high degree of causal connection is established. I shall not go into detail in discussion of the method. My personal judgment is that it is overrated, that "spurious" correlations, leading to quite erroneous conclusions, have frequently resulted from it, and that the labor involved in calculating coefficients of correlation is frequently too great for the results obtained. I should never be disposed to accept conclusions based on a "correlation coefficient" unless there were other converging evidence to support it. In effect we have, in the coefficient of correlation, nothing more than a refinement of the method of comparing two curves on a graph. The curves tell the story, in a general way, whereas the coefficient of correlation sums up all the comcomitant variations (and disagreements) in one figure. The eye does not readily compare the degree of relation between two curves with the degree of relation between two others. When it is desired to know which, of several relationships, is closest, the graphic method, or the method of comparing series of figures, burdens the attention. The coefficient of correlation condenses the information to such a degree as to make comparison easy. It is, then, merely a refinement of familiar statistical methods. Used wisely, guided by sound theory, it aids in presenting facts. It enables us to state quantitatively things we already know qualitatively. But there is no magic in it! As I have mentioned both Mr. Silberling and Professor Moore in this connection, it is proper to say that both of them are fully alive to the dangers and limitations of the method, and that Professor Moore emphasizes strongly the need for sound *a priori* testing of hypotheses before submitting them to the test of correlation. One danger, that of getting a high correlation merely because both of the variables compared are *growing rapidly*, has been avoided by Mr. Silberling by the use of successive *percentage* deviations, instead of absolute figures. For reasons explained by Mr. Silberling in a footnote, he uses, instead of the "probable error," a statement of the number of observations. Thus, "r = .78 (46)" means that the coefficient of correlation is .78, and that there are 46 observations for each of the two variables compared.

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effect is to lessen the evident degree of connection between stock sales and clearings. Thus the middle weeks show a closer correlation between the two variables than do all the weeks taken as they come. If figures for the month were taken, this complication would be smoothed out, and a fairer result might be expected to appear. The middle weeks, eliminating monthly settlements, probably eliminate more other things than they do share sales (which are in large degree paid for in 24 hours[1]), and so exaggerate somewhat the relation between shares and clearings. Monthly figures avoid both complications, though they lose something of the concrete causation. An intermediate figure might be expected for the monthly correlation, and this we find: r = 718(23).

A striking single fact in connection with these figures, giving them point as less extreme variations could not do, is found in the behavior of clearings when the Stock Exchange was closed, during the crisis of 1914. At that time, New York clearings, which had been about twice as great as country clearings, fell suddenly *below* country clearings. When the Stock Exchange was opened, the old proportions suddenly reappeared.

That speculation spreads far beyond New York, New York being the centre for dealings in securities, etc., which involve the whole country, is, of course, well known. The extent of this Mr. Silberling seeks to measure by correlating clearings outside New York with New York share sales. His weekly correlation for these two variables for 1909–10 gives r = .368(103), and the correlation for the mid-weeks gives a higher figure, r = .424(46). The monthly correlation shows r = .257(23), a lower figure, "which is perhaps due in part to the fact that the bulk of the outside monthly clearings show relatively moderate fluctuations, because

[1] They get into clearings, however, *two* days after.

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of their diverse composition, and are less sensitive than the periods of shorter length."

Seeking an index of the variations of that trade which is, in Professor Fisher's phrase, governed by "physical capacities and technique"—a law which Professor Fisher,[1] as we have seen, would apply to the great total of 387 billions which he has constructed—Mr. Silberling chooses the gross earnings of the principal railways as the best available test. Railways deal with all manner of other enterprises. He correlates this with clearings outside New York. "The question might arise at once whether changes in traffic are strictly concomitant with changes in payments involved by it, and therefore with the clearings resulting. The preliminary hypothesis that a 'lag' ensued between traffic and the bulk of the payments was first tested by correlating the railway figures with clearings of one month [2] and two months later, but no correlation was obtained. The direct month-to-month correlation yielded, however, a result r = 524(23)." This suggests that outside clearings are, in substantial degree, an index of physical trade, but Mr. Silberling calls attention to certain chance agreements between railway traffic and speculation in cotton and produce and grain, speculation in the crops which are in current movement, and regularly recurring concomitances between traffic and speculation in March, when the railway traffic revives after the February lull, and when there is a large mass of dealing in Spring deliveries in Chicago. In view of the facts later to be developed, with reference to the small actual value of the necessary physical exchanges (partially covered already) as compared with clearings,

[1] Professor Kemmerer, also. See his index of variation of trade, *op. cit.*, pp. 130–131.

[2] It is unfortunate that weekly figures from railways do not exist in such number, or for roads of sufficient importance, to justify correlations of the weekly figures with clearings.

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this query is well put. We may easily have here a "spurious" correlation. Taking it at its face value, however, and taking the correlation as indicating the influence of physical trade on bank transactions, we get the following results, when *total clearings for the country* are compared with (a) New York share sales, and (b) with railway gross earnings: (a) r = .607(23); (b) r = .356(23). "Physically determined trade" is at best a minor factor in that total "trade" represented by bank transactions!

Mr. Silberling has buttressed his results with a consideration of various alternative possibilities which might give them a different interpretation. I need not, for present purposes, go further into his figures.[1] Taken in conjunction with the other data presented, and to be presented, together with the theoretical discussion of the nature of trade, and its relations to money and credit, which the present volume contains, they give the present writer abundant confidence in the thesis that the great bulk of trade in the United States is SPECULATION, rather than that sort of trade which is determined "by physical capacities and technique."

The figures given above, of the inventory of wealth at a given moment of time, by the Bureau of the Census, show only trifling magnitudes, as compared with the estimated 387 billions of deposits made in 1909, of items which could enter into ordinary trade, as distinguished from speculation and dynamic readjustments. An effort to calculate ordinary trade on the basis of figures running through the year may throw further light on the problem. Railway, gross receipts for the year ending June 30, 1909, were less than two and a half billions. This is six-tenths of 1%

[1] Professor W. M. Persons informs me that Mr. Silberling's results are in accord with calculations which he has made. *Vide* his article in the *Am. Econ. Rev.* of Dec. 1916.

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of the total. Receipts of the Western Union Telegraph Company were $30,451,073—less than one-hundredth of 1%. The Post Office in the fiscal year ending in 1909 took in $203,562,383. This is something over one twentieth of 1%. These are gigantic sums. But they are insignificant indeed in this computation. Millions of smaller items simply do not count at all—ten million items of $387 each would give only 1%. The total net income of the United States, as estimated by W. I. King for 1910, including all forms of income, dividends, interest, wages, rents, profits, salaries, etc., is $30,500,000,000 [1]—around 7% of the 387 billions.

Let us sum up the major items of ordinary trade. From Kinley's figures, we may get some idea of the proportions of wholesale and retail trade to the total for 1909, assuming that the deposit figures indicate that total. Retail deposits make up less than one-eleventh of the total, and wholesale deposits about two-elevenths. The figures were: retail, 60 millions, wholesale, 124 millions, and "all other," 502 millions. But the "all other" deposits were lower than normal. New York City was, in the first place, probably less complete than the rest of the country, in the figures returned, and, in the second place, New York City, as shown by the clearings of March 17 (the next day, when checks deposited in New York would get into the clearings) was 28% below normal. The rest of the country was within 3% of normal.[2] Not to refine matters too much, we shall, on the assumption that the variable element in New York deposits is connected with the Stock Exchange (as shown by Mr. Silberling's correlations and other considerations), and on the assumption that deposits connected with the stock market appear in the "all other" deposits, add a little

[1] *The Wealth and Income of the People of the United States*, New York, 1915.
[2] See our chapter, "Statistical Demonstrations of the Quantity Theory."

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over 20% of New York's total of 198 millions, or 40 millions, to the "all other" deposits for the country, leaving the wholesale and retail deposits unchanged. What error there is in this is favorable to the wholesale and retail deposits. Our proportions, then, are: retail, 60, wholesale, 124, "all other," 542, total, 726. If the retail deposits correctly represented retail trade, we could then say that retail trade was a little less than one-twelfth of the whole, and wholesale trade about one-sixth. But there are many speculative transactions engaged in by wholesalers, and a good many by retailers. The writer knows a small delicatessen dealer on Amsterdam Avenue, in New York, who frequently speculates in eggs and canned goods. A colleague in the Harvard Graduate School of Business Administration is authority for the statement that speculation in canned goods and some other things is quite common among retailers, particularly "hedging" by the use of "futures," in canned goods. Speculation among wholesalers is very extensive. The same is true of manufacturers. The same authority cited some cotton manufacturers whose profits from cotton speculation are greater than their profits from manufacturing. We shall see reason to suppose that a very substantial part of manufacturers' deposits were included in the wholesale deposits. That the figures for retailers' deposits exaggerate the retail trade may appear from several considerations: (1) The proportion of checks to cash reported is too high: 73.2%. Dean Kinley allows 5% of the checks deposited to be "accommodation checks,"[1] cashed for customers, rather than taken in in trade. (2) If retail deposits are taken as exactly representative of retail trade, we should get a retail trade for the year of over 32 billions (1-12 of 387 billions), which would exceed the total income of the country as calculated

[1] *Loc. cit.*, pp. 78–79.

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by King for 1910. Dean Kinley reached the conclusion that the retail deposits reported in 1896 also exceeded the probable retail expenditures.[1] Of course, not all of retail trade is in consumption goods. Hardware stores, lumber stores, and some other retail establishments sell, not only to householders for domestic use, but also things which enter into further production, and so do not come out of annual income. If we include in retail trade various items which were not included there in Kinley's figures, such as hotels, theatres, newspaper receipts from subscription and street sales, physicians' fees, etc.—all those items which enter into the domestic budget, including domestic service, we should still not be justified in reaching a total as great as the total income of society, since there would then be no allowance for savings, which we should not count in trade, or for life insurance, which we shall count separately. The items sold at retail which enter into further production cannot make a great total, since large producers buy such things at wholesale. Total retail trade, therefore, and, in addition all the other items in the domestic budget, must be held below the figure for total national income. Suppose, to be very liberal, we allow 29 billions [2] for all these items, under the general head of "retail trade."

For wholesale trade, if we take the figures at face value, the estimate would be 65¾ billions ($^{124}/_{726}$ of 387 billions, or 17% of 387 billions). But we have seen that there is a great deal of speculation among wholesalers. Not all of their deposits, by any means, represent receipts from ordinary business. Moreover, there is much overcounting here, several checks being used for one transaction, especially where wholesalers have branch houses,

[1] *Jour. of Polit. Econ.*, vol. v, p. 165.

[2] Even this is too high, for 1909, on the basis of our estimate for net income in 1909, in the Appendix to this chapter.

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and checks connected with loans and repayments, and transfers of funds from one bank to another. How much we should subtract for this there is no way to tell. In the case of retail figures, we have the additional check of the figures for total net income, but there is no such check here. We shall, therefore, make no subtraction, but shall content ourselves with pointing out that we are allowing many billions [1] to "ordinary trade" to which it is not entitled, which will much more than offset errors in the opposite direction which the reader may find in our computations.

Do manufacturers' receipts from first sales belong in the wholesale deposits, or must they be counted as a separate item? Dean Kinley does not say. In his list of items, as reported by banks, that go in the "all other" deposits,[2] he does not mention manufacturers, and the item is far too important not to have been mentioned by so careful a writer had he supposed that it belonged there. If manufacturers' first receipts belong, not in the wholesale deposits, but in the "all other" deposits, then we should expect manufacturing cities to show a high percentage of "all other" deposits as compared with wholesale deposits. The city of Pittsburg should be a good test case. The figures there, for State and national banks and trust companies, are:

		Per Cent.
Retail deposits	$1,061,420	9.6
Wholesale deposits	3,368,004	29.7
"All other" deposits	6,672,378	60.6

For Pittsburg, the percentage of "all other" deposits is lower decidedly than the percentage for the country as

[1] The extent of speculation in wholesale trade is discussed in this chapter, *infra*. "Double counting" is discussed in the chapter on "Statistical Demonstrations of the Quantity Theory."

[2] *The Use of Credit Instruments*, p. 151.

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a whole (about 75%), much lower than for cities where there is active speculation, as Chicago and St. Louis, to say nothing of New York, and is closer to the percentage of the South Atlantic States, 52%, than to the average for the country. The wholesale deposits of Pittsburg, however, rise to 29.7%, as against an average for the country of 17%. There is nothing in these figures to suggest that manufacturers' first receipts are exclusively in the "all other" deposits. I should think it safe to hold that a substantial part of them were included in wholesale deposits, and so already accounted for in our estimate. The total value of products manufactured in 1909 was $20,672,051,870. I shall allow $5,672,051,870 of this to have been already accounted for in our estimate of wholesale trade, and count 15 billions of it as a separate item. If there is an error here, it is very much more than offset by our failure to subtract anything from the wholesale figures for speculation. I think it probable that much more of the figures for manufactures should be assigned to the wholesale figures than I have assigned.

To these figures, we may add a number of other items, absolutely great, but insignificant, in comparison with the 387 billions not only, but also with the figures for retail and wholesale trade already reached. These are: total farm value of farm products (not nearly all of which is sold off the farm) $8,760,000,000; total mineral products, $1,886,772,843; total mill value of lumber, $684,479,859; total life insurance premiums (much of which is savings, and in no proper sense trade), $748,027,892; total fire, marine, casualty and miscellaneous insurance, $362,555,850; total wages and salaries, $14,303,000,000; total land rent, $2,673,000,000; [1] and the items for railway gross re-

[1] The figures for rent and wages are from W. I. King, *op. cit.* The other figures are from the *Statistical Abstract of the United States*, unless otherwise

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ceipts, post office, telegraph, already mentioned. The total of these items, together with retail and wholesale trade and manufactures, is $141,860,618,000. This is only 36.6% of the total of 387 billions. It leaves over 245 billions unexplained. What can the 245 billions represent? There is really no way in which ordinary trade can make up more than a very few more billions, so far as I can see. There remain no items as big as 1% of the total, and, as we have seen, small items, of hundreds of dollars each, are like "infinitesimals of the second order"—they simply do not count at all when such staggering figures are involved.[1]

stated. King's estimates are for 1910. The other figures are for 1909. Compare this list with my discussion in the *Annalist*, March 6, 1916, p. 317, where I made computations purposely much too large. In that computation I clearly greatly exaggerated salaries and professional incomes, and rent as well as retail and wholesale trade. My figure there included the rent of houses as well as the rent of land. King's figure is only for land rent. However, in view of the fact that a high percentage of real estate is used by the owner, with the result that no rent-payments are required, I think King's figure high enough for the whole item.

[1] Professor Fisher has estimated total real estate exchanges in the country at less than 1% of the total 387 billions (*op. cit.*, p. 226), and a colleague of the Harvard Business School has given me an estimate of $1,300,000,000 for total advertising in the United States. Neither of these items is properly counted part of the "static" trade that would occur were things in "normal equilibrium." If, however, we counted them, we should add only 1%, say, of the total. When it is seen how insignificant, in comparison with the 387 billions indicated by deposits, the figures for total manufactures, total farm products, and total wages, are, there really is little need to argue the case. It is impossible to find, in the "ordinary trade" we have not mentioned, items whose total will equal the least of these three. Moreover, we have allowed for a multitude of these items in permitting the figure for retail trade to be as high as it is, and have left large leeway in making no deduction for the speculation in wholesale trade, and in counting farm products in full. Interest and dividends I have not counted. They are not "trade." When we have counted stock sales, we have already counted the exchanges in which dividends were sold. The man who buys the stocks has already bought the dividends. To count the dividends in addition would be a case of that double counting of capital and income against which Professor Fisher has warned us in his *Nature of Capital and Income*. Rents and wages represent payment for current services, and are properly items of trade. Interest and dividends are one-sided money pay-

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There remains, then, a total of 245 billions of check and money payments which are for something other than the ordinary trade of the country. What do these payments represent? Much of this total represents overcounting and duplications of various kinds, which we shall consider in a later chapter. Much of it also represents speculation and dealings other than speculative in securities. When we seek to find actual figures of transactions in any field, retail, wholesale, or speculative markets, or anything else, it is exceedingly difficult to find anything that approaches the amounts indicated by the banking transactions connected. I do not think that a record of all sales would show retail sales or wholesale sales anything like so great as the figures as we have allowed for them on the basis of the retail and wholesale deposits. When we look at the recorded figures of transactions on the speculative exchanges (or at estimates which competent observers make when records are not available), the figures, though very large, do not begin to equal the banking figures with which we have to deal. The New York Stock Exchange in 1909 showed sales, recorded on the ticker, of nearly 215 million shares of stock, with an approximate value of over 19 billions [1] of dollars. This was not an extraordinary year. In 1901 nearly 266 million shares were sold, in 1905, over 263 millions, in 1906, over 284 millions. A number of other years have approached the figures for 1909. If stock sales be a good index of general speculation, 1909 is a

ments, completing transactions for which money has already passed, and in which a man is merely getting a delivery of something he has already bought. In general, loans and repayments are not properly counted as part of ordinary, or physical trade. If, however, we counted total corporate dividends and interest we should get only $4,781,000,000 (King's estimate, *loc. cit.*, p. 262). This is a little over 1%. What else is there? In his article of March 13, 1916, in the *Annalist*, Professor Fisher failed to meet my suggestion that a bill of particulars was called for!

[1] See the table of shares and approximate values in Pratt's *Work of Wall Street*, 1912 ed., p. 187. This table covers the years, 1890–1911.

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very satisfactory year from which to have got figures, as showing neither extreme speculation, nor extreme dullness —which latter was the case in 1896 when Kinley's other big investigation was made. The figures for shares sold, however, do not exhaust the business done at the New York Stock Exchange. "Odd lots," *i. e.*, sales of less than 100 shares, are not recorded on the ticker. Mr. Byron W. Holt estimates that from 25 to 30% would be added if they were counted. DeCoppet and Doremus, of New York, who handle at least as much of the "odd lot" business as any other New York house, have given me the following information about the "odd lot" business: (1) the volume of odd lot sales is, roughly, from 20 to 25% of the volume of hundred share sales; (2) the odd lot business fluctuates in conformity to the hundred share market; (3) the odd lot speculator is just as likely to be a "bear" as is the hundred share speculator, and, in general, odd lot business is like the hundred share business. If we take the figure on which these two estimates agree, 25%, we may add 53¾ million shares to our 215, getting 268¾ million shares for 1909, with a value of about 24 billions. Bond sales recorded would add about 1 billion more. There are, further, some unrecorded sales, indeterminate in amount, but sometimes very substantial, when brokers have a number of "stop loss" orders. They match these before the market opens, and, if the prices are reached in the actual trading, these sales become effective automatically, without getting on the ticker. How extensive this is cannot be stated. It may sometimes add very substantially.[1] Thus, on the floor of the New York

[1] Boston *Transcript*, "Tape Record of Sales Incomplete," May 6, 1916, Pt. I, p. 12. The *Transcript* quotes as authority the New York *Commercial*. Following the extraordinary market of Sept. 25, 1916, when the ticker recorded 2,317,000 shares sold on the New York Stock Exchange, the newspapers estimated that missed sales, odd lots, and unrecorded sales on stop

Stock Exchange we have dealings in excess of 25 billions for 1909. This is nearly as large as the figure we have assigned, on the basis of the bank figures, to total retail trade of the country, and it may well exceed the retail trade in fact. Recorded sales on other stock exchanges do not, in the aggregate for the country, bulk very large. For 1910, when New York shares reached 164 millions, the total for Boston, Philadelphia, Chicago, and Baltimore was something over 21 million shares.[1] The New York Curb has had "million share" days, but the average value of shares is low. But the dealings on the floors on the exchanges and "curbs" are far from all of the dealings in securities! Only securities which have been admitted by the authorities are dealt in on the exchanges. The volume of unlisted securities is enormous. Moreover, not all, by any means, of the sales of listed securities take place on the floors of the exchanges. The bond expert of a large banking house in Boston informs me that the "over-the-counter" business in Boston, both for stocks and for bonds, much exceeds the business in the Boston Stock Exchange, and others among Boston brokers have expressed the same opinion. The statement has been repeatedly made in the financial press that of the bonds listed on the New York Stock Exchange, ten are sold over the counter for one sold on the floor. Evidence on this point is not to be had in definite figures, of course, but I have found no one in Wall Street who regards it as extravagant. A single big bank in New York sold $550,000,000 in bonds in 1911—more than half the recorded bond sales on the Stock

loss orders, would bring the total above 3,000,000 shares. There was an unusual number of stop orders caught that day. There will be very few other sales of 100 shares missed by the ticker, except in times of extraordinary pressure. See *Boston Herald*, Sept. 26, 1916, p. 1.

[1] Hollander, J. H., *Bank Loans and Stock Exchange Speculation*, Senate Document 589, 61st Congress, 2d Session, p. 23.

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Exchange.[1] I should not know how to estimate the volume of outside dealings within many billions of "probable error." If ten billions of listed bonds are sold over the counter in New York alone, we may well suppose that the volume of over-the-counter sales of listed and unlisted securities at least is not smaller than the recorded sales on the floors of the exchanges. But this is all guess work. There are no definite data.

For produce, cotton, and grain speculation we have, in general, estimates rather than records. For the Board of Trade, in Chicago, there is one quite striking piece of information. That is that the Federal War Tax of 1 cent per hundred dollars on grain and provision futures on the exchanges produced $2,000,000 in Chicago alone in 1915.[2] For the purposes of the tax, deliveries within thirty days were counted, not as futures, but as "spot" transactions. The tax was collected almost wholly on grain. If the above figure is correct, then it is clear that dealings in these futures of over thirty days aggregated 20 billions of dollars worth. This gives no estimate of spot transactions, which are, however, very great. All this trading involved less than 400,000,000 bushels of grain received at Chicago—a little over a billion bushels were received at all primary markets. The grain received at Chicago was, thus, (at 80c. per bushel), sold sixty-two times over in these futures, and an unknown number of times in spot transactions. There are further enormous spot transactions in provisions of various kinds at Chicago.

Chicago is the great centre, of course, for this kind of speculation in the United States. It may well be the world's chief market, so far as futures are concerned, though evidence to establish such a thesis is not at hand. London

[1] Pratt, *Work of Wall Street*, 1912 ed., p. 264.
[2] *Annalist*, Dec. 27, 1915, p. 719—"Selling Phantom Grain."

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and Liverpool are gigantic centres of commodity speculation. But we have numerous cities in the United States where such speculation is very great. St. Louis, Kansas City, Minneapolis, New Orleans, and other cities are active speculative centres. New York, while small in its volume of grain and produce speculation as compared with Chicago, is the world's centre for cotton speculation, and the world's centre for futures in coffee, though yielding precedence to Havre, Santos and Hamburg,[1] ordinarily, in the volume of spot coffee transactions, and though handling only a very small amount of spot cotton. The volume of cotton sold in an ordinary year in New York is 50,000,000 bales.[2] though only about 160,000 bales are ordinarily received there, in a year.[3] In the five years preceding 1909, the sales on the New York Coffee Exchange averaged over 16 million bags of 250 pounds each.[4] In 1915, 32 million dollars were deposited as margins in connection with this speculation in coffee, and in ordinary years this runs from 25 to 30 millions, according to the Treasurer of the Exchange. The relation between the margins put up and the total pecuniary volume of trading is not indicated, but in most exchanges the actual depositing of margins is a small fraction of the pecuniary magnitude of the turnovers. Both the Cotton and the Coffee Exchanges are international centres. The Coffee Exchange now handles large transactions in sugar, also.

Contacts between the organized exchanges and ordinary

[1] My information regarding the Coffee Exchange in New York comes from the Treasurer of the Exchange, Mr. Jas. H. Taylor, through the courtesy of Mr. W. H. Aborn, of Aborn and Cushman, New York.

[2] Report of the Hughes Commission, in appendix to Pratt's *Work of Wall Street*, Rev. ed., p. 417. This report gives information regarding all the organized exchanges in New York.

[3] L. Conant, Jr., "The United States Cotton Futures Act," *American Economic Review*, March, 1915, p. 1.

[4] Hughes Commission, *loc. cit.*, p. 418.

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business are very numerous. Producers in every line who can do so protect themselves by "hedging" in the exchanges which deal in their raw materials. This is a commonplace, so far as millers are concerned. The writer has found millers in a town off the main lines of the railroads in Missouri who regularly sell short a bushel of wheat on the St. Louis Merchants' Exchange for every bushel they buy to grind. The business man who does not sometime take a "flier" in the market for other than hedging purposes is rare! But, apart from the organized markets there is an immense volume of speculation. If a wholesaler buys only what he can sell to retailers, it is not speculation. But if he buys in excess of the anticipated demands of his retailers, expecting to sell the excess at an advance to other wholesalers, he is speculating. If a farmer buys cattle to feed, he is not speculating, but if he buys them thinking to sell them at an advance in a short time, and does so, the transactions are speculative. The line is not easy to draw, in practice. Intention is shifting and uncertain. There is chance in every industrial, commercial, and agricultural operation. But for the point at hand, the test is simple: do more exchanges take place than are necessary, under the existing division of labor, to advance the materials of industry through the stages of production, and get things finally to the consumer? If so, the excess of exchanges is speculative. Trading between men in the same stage of production is speculation. It represents trading to smooth out dynamic changes, to bring about readjustments which would have been unnecessary had conditions really been static, and had the initial plans of enterprisers been adequate. Trading in anticipation of further trading with men in the same stage of production is speculative. This sort of thing, in the wholesale business, especially, is exceedingly common. This has been noted by Professor

Taussig, and made by him an important point in the theory of crises. Dean Kinley [1] called attention to it as a matter of importance in connection with his investigation in 1896. The coming of cold storage, and the development of the canning industry have, I am informed by a colleague in the Harvard Business School, enormously increased this speculation among both wholesalers and retailers, and it is very important in most wholesale lines. There is short-selling in materials for construction purposes, and in metals, apart from organized exchanges, and, where possible, contractors in the building trade often protect themselves by means of future contracts with speculators who are selling short.

Land speculation, in varying volume, is found in every part of the country. There is speculation in leases, in options on real estate, and in options on leases.[2] It may be noticed, too, that sales of "rights," of puts and calls and straddles, and other contract rights, are regular factors in the organized exchanges. Wherever profits are to be made by leveling values as between different places or different times, speculation arises, and, with dynamic change, this means everywhere, in every business, and all the time! The shifting of labor and capital from industry to industry, leveling returns to capital and labor, involves an enormous amount of trading that would not occur in a "normal equilibrium." Much of this the Stock Exchange does. That is what it is for. But much of it has to do with unincorporated industry, and a vast deal of speculative exchanging takes place to this end apart from the organized exchanges.

Speculation in bills and notes, by note-brokers and par-

[1] Taussig, *Principles of Economics*, I, p. 405; Kinley, *Report of the Comptroller* for 1896, p. 89.

[2] This is probably more extensive in London than in the United States.

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ticularly by dealers in foreign exchange, occurs on a large scale, and accounts for a great deal of the banking figures. This has nothing to do with physically determined trade. From the standpoint of Professor Fisher's "equation of exchange," it must be barred, if the contention that "trade" is determined by "physical capacities and technique" is to be adhered to. Speculation in demand finance bills is barred in any case, since "money against checks," and "checks against checks," are excluded by his definition.[1] But as an explanation of no small part of our unexplained 245 billions of dollars, these items must be brought in. They are "double counting" from the standpoint of Professor Fisher's equation. They are, however, speculation. An official in a great New York banking house, in charge of the foreign exchange department, writes that in times when exchange rates are fluctuating, enormous quantities of drafts on Europe will be bought and sold, during a period of a couple of weeks or months, whereas under other conditions such transactions might amount to little with the same volume of imports and exports. The part of this which is between banks, a very big item, would not count in the 245 billions, but to the extent that foreign exchange brokers outside the banks participate, their activity helps to explain our 245 billions.

If it be true that speculation, including all manner of readjustment to dynamic changes, makes up the overwhelming bulk of trade in the country, then Fisher's *indicia* of variation in trade, weighted as they are, are totally misleading. The same is true of Kemmerer's *indicia* of "growth of business."[2] These are: population, tonnage entered and cleared, exports and imports of merchandise,

[1] *Loc. cit.*, p. 47.

[2] *Loc. cit.*, pp. 130–131. The very title, "*growth* of business," suggests the fallacy to which we refer in the text, namely, that we have a steady upward movement, with little variation. This is largely true of production and

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postal revenues, gross earnings of railways, freights carried by railways, receipts of the Western Union Co., consumption of pig iron, bituminous coal retained for consumption, consumption of wheat, consumption of corn, consumption of cotton, consumption of wool, consumption of wines and liquors, market values of reported sales on the New York Stock Exchange. Only the last of these is in any sense an index of speculation. It is swallowed up by being put on a par with the other fourteen items. Its influence on the final index, made by averaging the others is, as inspection shows, virtually *nil*. Out of the twenty-six years his figures cover, the general index moves counter to the share sales 14 times! Utterly random figures would have come nearer to the facts in the case. It is particularly striking that Professor Kemmerer, whose total figures, as Professor Fisher's, rest for their absolute magnitude on Kinley's investigation,[1] should assign *89%* of his estimated trade (183 billions in 1890) to wholesale commodities,[2] (with 3% to wages, and 8% to securities), when Kinley's figures show that wholesale deposits are a minor fraction of the total!

The constancy in the figures of these two writers for trade from year to year, a general steady, upward growth, does indeed suggest that trade is determined "by physical capacities and technique," and that it does stand as a great, independent, inflexible factor, independent of money and deposits, constituting a real causal coefficient with them in determining prices. If, however, speculation is as big a factor as our analysis would indicate, then trade is a highly

consumption. It is in no sense true of "trade," as distinguished from production.

[1] Kemmerer relied on the investigation of 1896, whereas Fisher used more the figures of 1909. Kemmerer does not, in general, assign an absolute magnitude for "trade," but for 1890 he gives a figure. *Loc. cit.*, p. 136. *d.*

[2] *Loc. cit.*, p. 136, *d.*

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flexible thing, varying enormously from year to year, moved by a multiplicity of causes, among them *fluctuations* in particular prices, and the ease and tightness in the money market—the quantity of money and deposits.

But quite apart from speculation, it is not true that trade is a mere matter of physical capacities and technique, a passive function of production. Rather, one would almost have to reverse the relation. Production waits on trade!

Production, as now carried on, is primarily conducted in the expectation of *sale*, and of profitable sale. Trade does not go of itself, automatically. Rather, it is a highly difficult matter, calling for the highest order of ability, and the labor of innumerable men. In general, I think it safe to say that in ordinary times, the manufacturer loses vastly more sleep over the question of how he shall market his output, than he does over the question of how he shall produce it. A clerk in the Westinghouse Air Brake Company, engaged in the accounting department, spoke recently to the writer of the "productive end" of the business. On inquiry, it developed that he meant the selling department! He stated that the manufacturing department also, in the language of the employees, in that corporation, would also be termed "productive," but that the selling department was *the* productive department.

If one reflects a little as to the proportion of "costs" that go into selling, as compared with technical "production," I think my point will be clearer. Advertising has developed so enormously that it needs little discussion. It has been stated that the "Sapolio" people once tried, after their reputation seemed thoroughly established, to stop advertising, with such disastrous results that very extraordinary efforts were required to reëstablish the brand. Number 2 wheat is not advertised, in the great magazines, but innumerable brands of flour get newspaper and magazine

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advertising,—some of them in such a periodical as the *Saturday Evening Post*, and even those which are locally consumed are commonly advertised in the local press. Nor is it only finished products, of the sort that must be sold to the fickle public, that involve these heavy selling costs. The writer has in mind a corporation producing a high-grade type of glazed retort, in the production of which it has virtually a monopoly, since the clay with which it is made does not coexist with the skill to make it in any other place. The particular product is an indispensable part of many important technical processes. Substitutes made of other clays, and by other companies, are known by the trade to be unsatisfactory. The buyers are all highly trained business men. Here, if anywhere, selling costs should be slight. But the chief selling agent of the corporation has found it necessary, in order to keep the business going, to incur huge expenses for entertaining his customers, finds it necessary to incur great travelling expenses, to use only the most expensive hotels, and, incidentally, to drink a great deal more than his personal inclinations would call for, in keeping the business for his house. I waive discussion of the extraordinary fees which a trust promotor makes, in effecting a consolidation of big business units,—a process of exchange. I am speaking now of the ordinary costs involved in ordinary trade. The army of travelling salesmen, the body of stenographers, who write letters, with various "follow-ups," in the effort to get more business, the growing complexities of such letter writing, in which all suspicion of "circularizing" must be allayed, one-cent stamps being absolutely taboo!—these things are the commonplaces of business. They are in the primers in the "commercial colleges" and "schools of commerce." Only the orthodox economist, with his doctrine of the impossibility of general overproduction, is ignorant of them!

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This feature of modern business has been much elaborated in a recent book which has not received the attention it merits—though its strength is rather in criticism than in constructive doctrine. I refer to Dibblee, *The Laws of Supply and Demand.*[1] Dibblee makes an interesting contrast between commercial and manufacturing cities, maintaining that the former necessarily outgrow the latter—a contention which London, New York, Chicago and other places strikingly illustrate. He presents a truly remarkable fact about London:[2] a recent report of the Commission on London Traffic states that there were in London 638 factories registered as coming under the Factory Acts, with an average horse-power of 54. The total power employed within the London area under the Factory Acts, chiefly used in newspaper printing, was 34,750 horse-power —just one-half of what is required for the steamship, Mauretania! This is the greatest city in the world. What do its millions do for a living?[3] The town of Oldham,[4] he asserts, with 100,000 inhabitants, has spindle capacity enough to supply more than the regular needs of the whole of Europe in the common counts of yarn. To *market* the output of Lancashire, "the merchants and warehousemen of Manchester and Liverpool, not to mention the marketing organization contained in other Lancashire towns, have a greater capital employed than that required in all the manufacturing industries of the cotton trade." Accurate estimates of the proportion of "selling costs" to costs of technical production are doubtless impossible, for the gen-

[1] A recent discussion of these problems is to be found in Shaw, A. W., *Some Problems in Market Distribution*, Harvard Univ. Press, 1915.

[2] *Op. cit.*, pp. 51–52.

[3] London, Paris, and New York all do a great deal of manufacturing, particularly of finer things, whose value is high, and which require a high proportion of labor, as compared with machinery. *Cf.* our discussion of the London "Money Market," *infra*, in Part III.

[4] *Ibid.*, p. 47.

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eral field of trade, and precision is unnecessary for my purposes. Dibblee's conclusion, after contrasting retail and wholesale prices, and analyzing the expenses incurred in selling prior to the wholesale stage, is that the cost of marketing is at least equal to "real cost of production," occasionally only slightly below it, and often far above it (62).[1] If one considers how large the item of "good will" often bulks in the value of "going concerns" [2]—good will being in large degree often just a capitalization of prior costs of this nature—Dibblee's estimate need not be exaggerated. Trade connections, trade-marks that have reputation, etc., often represent enormous output in thought, work, and expense. Selling costs may, like other costs, be divided into "prime" and "overhead" costs. Some of the latter lead to long-time consequences, pay for themselves only in the long run. These may be "capitalized" in "good will." [3] Of course, not all good will is got at a cost. Much of it is adventitious.

In the light of the doctrine that trade is independent of money and credit, one wonders why it should be thought necessary to extend branches of American banks to the South American markets which we are now reaching out toward. And why have Americans, from the beginning, been constantly increasing commercial banks? [4] It is easy to sneer at the efforts of the successive frontiers in our

[1] *Cf.* Jenks, *The Trust Problem*, Rev. ed., p. 29. The doctrine that these costs are net social loss is challenged by the present writer in an article, "Competition *vs.* Monopoly," in the New York *Independent*, of Oct., 1912.

[2] "Royal" has been estimated at $5,000,000; "Spearmint" at $100,000,000. Mr. Guy C. Hubbard, of the *Dry Goods Economist*, New York, has given the writer some exceedingly interesting data regarding the value, as bankable collateral, of various trade-marks and firm names.

[3] *Cf.* our discussion of "The Reconciliation of Statics and Dynamics," *infra*.

[4] Significant in this connection, is the contention of recent students of American agriculture, that the great need is better organization and credit, facilities for *marketing*.

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history to provide themselves with banks of issue as based on a delusion, the delusion that bank-notes are "capital," and to say that their real need was, not more bank-credit, but more real capital. They needed more tools and live-stock, doubtless, but is that the whole story? And were their banks of no assistance in getting the additional capital of various sorts? And was it a matter of no consequence that they had an abundant medium of exchange? It seems almost childish to put such questions, but the quantity theory has as its logical corollary that to multiply banks is quite useless and wasteful, since the only result is to raise prices. If increasing bank-credit cannot increase trade or production, this corollary is inevitable. Indeed, the case may be more strongly stated. Quite apart from the wasted labor of bank-clerks and the waste of banking capital, the effect of increasing bank-development, on quantity theory reasoning, is harmful. If increasing bank-credit is to raise prices without increasing trade, then, on quantity theory reasoning, it must *depress* business. The reason is that rising prices in a given region make that region a bad place to buy in, and so curtail its exports. This is, indeed, the quantity theory explanation of international trade, to which attention is later to be given. The country which is expanding its banking facilities most rapidly will suffer most in competition in the world markets. This is why the United States have so little foreign trade! It also explains the rapid strides that China and Central Africa have recently made in capturing the world's markets. I submit that there is no flaw in this argument, if the premise of the independence of volume of trade and volume of bank-credit be granted. It follows from the quantity theory. That it is no caricature of Fisher's argument will appear, I think, from the following quotation,[1] which very

[1] *Loc. cit.*, p. 89. Though Fisher does not conclude that banking is bad,

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nearly states what I have just been saying, though it does not draw the conclusion that banking is a bad thing: "The invention of banking has made deposit currency possible, and its adoption has undoubtedly led to a great increase in deposits and consequent rise in prices. Even in the last decade the extension in the United States of deposit banking has been an exceedingly powerful influence in that direction. In Europe deposit banking is in its infancy." [1] Happy Europe, troubled only by war! It is greatly to be hoped, in the interests of American agriculture, that the efforts to increase agricultural credit facilities will fail!

We are driven to one of the most fundamental contrasts in economic theory, which appears under various guises and in different forms: statics *vs.* dynamics; transition *vs.* equilibrium, theory of prosperity *vs.* theory of goods; normal tendency *vs.* "friction." [2] Perhaps Professor Fisher, and the quantity theorist in general, would dismiss many of these considerations as not applicable to the general principle, which is a "normal" or "static" or "long run" law, not subject to considerations of this sort. It is scarcely open to Fisher to defend himself this way, because of his exceedingly uncompromising statement regarding

he does conclude that gold mining is a parasitic and socially injurious industry, like the making of burglars' "jimmies." See his *Elementary Principles of Economics*, N. Y., 1912, pp. 499–500.

[1] Fisher does admit that the *character* of the banking system, and of the money system, will affect the volume of trade. "There have been times in the history of the world when money was in so uncertain a state that people hesitated to make many contracts because of the lack of knowledge of what would be required of them when the contract should be fulfilled. In the same way, when people cannot depend on the good faith or stability of banks, they will hesitate to use deposits and checks" (78). But there is nowhere an admission that the *amount* of bank-credit has any influence on the volume of trade, and there are repeated assertions, as already instanced in the text, that the volume of trade is quite independent of the volume of money and bank-credit.

[2] Part IV of this book gives a detailed analysis to the problems involved in these contrasts.

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even "transitional" relations between volume of trade and money and credit. I shall not reply to anyone who offers such an objection by a general tirade against "static economics." I believe thoroughly in the method of economic abstraction, and in reaching general principles by ignoring, provisionally, in thought the "friction" and "disturbing tendencies" which often make the first approximations look somewhat unreal. But I raise this question: to what feature of our economic order do we chiefly owe it that we can make such abstractions? By virtue of what does friction disappear? What is it that makes our abstract picture of economic life, as a fluid equilibrium, with its nice marginal adjustments, its timeless logical relations, correspond as closely as it does to reality? The answer is: MONEY and CREDIT.[1]

It is the *business*, the *function*, of money and credit, as instruments of exchange, to bring about the fluid market, to overcome friction, to effect rapid readjustments, to give verisimilitude to the static theory, to make the assumptions of the static theory come true. Where exchange is easy and friction slight, there will not be two prices for the same good in the same market. Speculators, seeking profits of fractions of a point, will prevent that. By multiplying exchanges, they will level off values and prices. Because money and credit have done their work so thoroughly in the "great market," it is possible for men to talk about static theory, and to work out economic laws in abstraction from friction, transitions, and the like.

In the static state, all speculation is banished. There are no price-fluctuations to be smoothed out, no new prospects to be "discounted," no uncertainties to be guarded

[1] This thesis was set forth by the present writer at the 1915 meeting of the American Economic Association. See *Papers and Proceedings*, Supplement to March, 1916, *Amer. Econ. Rev.*, pp. 168–169.

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against by "hedging." Seasonal goods will, of course, have to be carried over from one season to the next, but this will involve merely warehousing and the use of capital —"time speculation," involving many sales, does not come in. One sale to the capitalist who carries the seasonal goods, with a sale by him to the man who means to use them, will suffice. It has been shown before that the great bulk of trade is speculation. But speculation is banished from the static state. Speculation is a function of dynamic change, waxing and waning with the degree of uncertainty that exists, the new conditions to which readjustments have to be made, the "transitions" that have to be effected. In other words, the laws governing the volume of trade are dynamic laws, laws of "transition periods," and so the whole notion which underlies the quantity theory, of "normal periods," "static" relations, etc., is here irrelevant. Volume of *trade*, as distinguished from volume of *production*, is controlled by the number and extent of the "transitions" that have to be made. The chief work of money and credit is done *in*, and *because of*, "transition periods." Assume a normal equilibrium accomplished, and you have little trading left to do. It will still be necessary, if you have the division of labor, and private enterprise, for goods to pass through as many different hands as there are different independent enterprisers in the stages of production, and on, through merchants, to the consumer. It will still be necessary to pay wages, rents, dividends and interest. But there will be no selling of lands, of houses, of factories, of railroads, or of securities representing these. By hypothesis these are already in the hands best qualified to hold them. The "static equilibrium" presents "mobility without motion, fluidity without flow." [1] The static picture

[1] *Cf.* J. B. Clark, *Distribution of Wealth*, *passim*, and J. Schumpeter, *Theorie der wirtschaftlichen Entwicklung*, pp. 1–101. See also the present

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is a picture of completed adjustment, where no one has an incentive to change his work, or his investments, because he has already done the best that he can for himself. It is, therefore, a picture of a situation where there is little incentive for those exchanges which make up the great bulk of the volume of trade in real life.

Hence the curious phenomenon that very much of static theory has been developed in abstraction from *money* and *credit*. Mill's theory of international values, for example, abstracts from money. "Since all trade is in reality barter, money being a mere instrument for exchanging things against one another, we will, for simplicity, begin by supposing the international trade to be in form, what it is in reality, an actual trucking of one commodity against another. So far as we have hitherto proceeded, we have found the laws of interchange to be essentially the same, whether money is used or not; money never governing, but always obeying, those general laws." [1] Other writers have similarly held that money is a mere cloak, covering up the reality of the economic process. Schumpeter, for example, holds that money is, in the static analysis, merely a "Schleier," and that "man nichts Wesentliches übersicht, wenn man davon abstrahiert." [2] *On the static as-*

writer's "Schumpeter's Dynamic Economics," *Pol. Sci. Quart.*, Dec., 1915, and A. S. Johnson, in *Quart. Jour. of Econ.*, May, 1914.

[1] *Principles*, Bk. III, ch. xviii, par. 1.

[2] *Theorie der wirtschaftlichen Entwicklung*, p. 77. Since the foregoing was written, Professor W. C. Mitchell has presented an admirable historical paper on "The Rôle of Money in Economic Theory," in which he has multiplied instances, in the history of the science, of this contempt for money, or abstraction from money, in economic theory. He finds that Marshall, and some other later writers, have given much fuller recognition to the rôle of money, which he conceives of primarily as an institution which has rationalized economic behavior, by forcing upon the individual book-keeping habits of thought. This still leaves it legitimate to abstract from money, however, for "pure theory." Highly important as is the "measure of values" function, it does not explain the main work which money, as money, actually *does* in economic life, nor need it be a source of value for money. *Cf.*,

sumptions, of the fluid market, with friction, etc., banished, money is, indeed, anomalous and inexplicable. It is a cloak, a complication, a vexatious "epi-phenomenon." There is nothing for it to do, and there can be, consequently, no "functional theory" developed for it. Static theory may be ungracious in ignoring its own foundation. But static theory is grotesque when it seeks to support its own foundation! Static theory is possible only on the assumption that the work of money and credit has been done. What, then, shall we say of static theory which seeks to explain the work of money and credit? Yet precisely this is what is undertaken by the quantity theory, with its "normal" or "static" laws of money and credit. A functional theory of money and credit must be a dynamic theory. To talk about the laws of money, "after the transition is completed" is to talk about the work money will do after it has finished working. For a functional theory of money and credit, we must study the obstacles that exist to prevent the fluid market. We must study friction, transitions, dynamic phenomena.

To this problem we shall come in Part III. For the present, I am content to have disproved the quantity theory contention that the volume of trade is independent of the quantity of money and credit.

infra, our chapter on "The Functions of Money." Professor Mitchell's paper will be found in "Papers and Proceedings," Supplement to the March, 1916, number of the *Am. Econ. Rev.*

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APPENDIX TO CHAPTER XIII

THE RELATION OF FOREIGN TO DOMESTIC TRADE IN THE UNITED STATES[1]

THE word, "trade," as used in connection with statistics of foreign and domestic trade has been irritatingly ambiguous. Few writers, in speaking of domestic trade, have meant the same thing by trade that they have meant by the word when speaking of foreign trade, and hence we have had many pointless efforts to institute comparisons between the two, and some very misleading statements about the matter. Thus, figures have been offered which would show that the foreign trade of the United States is only a fraction of 1% of the domestic trade. This conclusion is reached by taking the figures for banking transactions discussed in Chapters XIII and XIX as representative of domestic trade, and comparing them with the annual figures for exports and imports. This procedure is fallacious for several reasons:[2] the figures thus reached for domestic trade exceed even the total trading within the country, as shown in Chapter XIX. In the second place, as shown in Chapter XIII, the bulk even of these deposits which do represent real trading grow chiefly out of speculation. Even in ordinary trade, goods are counted several times before reaching the final consumer. It is clear, therefore, that even an accurate figure for total trading within the country would have little relevance when we

[1] The materials in this appendix are taken from an article published in the *Annalist* of Jan. 8, 1917, pp. 39, 53–54, and the New York *Times* Annual Financial Review of Dec. 31, 1916, and are reprinted by the courtesy of the New York Times Company.

[2] *Vide Annalist*, Feb. 7, 1916, pp. 183–184, and Feb. 21, 1916, p. 246.

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are seeking a figure to compare with exports and imports. Nor, if a comparison of the actual trading in which foreigners participate with the trading exclusively between Americans is sought, can we take the export and import figures as representative of the foreign trading—they do not include a multitude of highly important transactions in which foreigners participate. Very much of the business of the New York Cotton Exchange, the New York Stock Exchange, the Chicago Board of Trade, and other speculative markets represents foreign buying and selling, especially arbitraging transactions, and the other "invisible items" of foreign trade need merely to be mentioned for the economist to recognize the fallacy of a comparison which omits them.

What figures are relevant when we wish to compare foreign and domestic trade? First we must make clear the purpose for which the comparison is to be made. If we are concerned with the calls made by foreign and domestic trade on the money market, we should make use of a different method of comparison than that which will be here employed. The purpose of the comparison here undertaken is to determine how much of our American labor, land and capital is at work producing for the foreign consumer, as compared with the land, labor and capital in America producing for the American consumer. The comparison here undertaken is concerned with the question which is usually uppermost in the minds of those who undertake such a comparison, namely, *how important* is our foreign market to us? Obviously, for such a comparison as this, we should not count a given case of eggs twelve times merely because it changed ownership twelve times in getting from farm to breakfast table. Items of export and import count only *once* in the figures for export and import. We must find a figure for domestic "trade"

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in which items count only once, allowing no turnovers of the same goods to swell the total, if we wish to make our figures comparable.

The method proposed for making this comparison, for a long series of years, is a modification of the method used by the writer in an article in the *Annalist* of Feb. 7, 1916. A figure based on the bank deposits of *retail merchants* in Kinley's 1909 investigation was there taken as properly comparable with the export and import figures. The final sale to consumer by retailer is "the one far off divine event" toward which the whole productive process moves. Everything else in production and exchange looks forward to this. Ultimately, from the demand of the final consumer comes all the demand that is directed toward the agencies of production, even though the laborer sees his immediate market in the person of the employer, and the capitalist or landlord sees his immediate market in the person of the active business man. The figure reached for retail trade by the method then employed was $34,500,000,000 for 1909. This figure was too high, as shown in Chapter XIII above, and the figure reached now for retail *deposits* by the same method is $32,000,000,000. Even this figure is too high, however, as I there concluded, to represent retail *trade*, and I shall use it only as a check on King's figure for *the total income of the United States in 1910*, which I shall use as a base figure instead of my own. King's figure for the total income of the United States in 1910 is $30,500,000,000.[1] I take this figure as including all that the American people spend for consumption, with retailers, physicians, hotels, theatres, etc., and also their net savings for the year. Part of this they spent for foreign products. The rest they spent at home. This residue spent at home gives us a figure which we may properly

[1] *Wealth and Income of the People of the United States*, p. 129.

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compare with the amount the foreigner spends in America, as indicating the ratio of foreign to domestic trade for the purpose in hand. We subtract, in other words, from the figure for total income the figure for *imports*. Then we compare the residue with the figure for *exports*, and get our ratio of foreign to domestic trade. The export and import figures must first, however, be reduced to a *retail* basis. That is, assuming that wholesale prices are two-thirds of retail prices, we add 50% to the figures for exports and imports (which are wholesale figures) before making the subtraction and the comparison. The ultimate consumer, both in Europe and America, pays for imports and exports on a *retail* basis.[1] This method, applied to the figures for 1910, gives us a ratio of about 10:1 for domestic to foreign trade—the lowest percentage for foreign trade which we shall find for any year in the period investigated, 1890–1916.

This comparison is still unfavorable to foreign trade. Domestic trade, in our figures, includes savings and investments, including investments made by Americans abroad. Import figures are marred by undervaluations, exports are not all counted, and the figures for exports and imports do not include foreign investments in America. American investments abroad should not be counted as part of domestic trade. Moreover, our figures take no account of travellers' expenditures, or of services performed by professional men of one country for men in another, or of certain other "invisible items." But while this makes our percentage for foreign trade too low for all years, it probably does not greatly upset the results for yearly variations in the ratio except for the year 1916, when the figure for domestic trade is left decidedly too high, and the ratio for

[1] The justification of this procedure is argued more fully in my article in the *Annalist* of Feb. 7, 1916, above referred to.

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foreign trade is too low, as compared with previous years.

For years other than 1910, indirect calculations must be resorted to for domestic trade. I have substantial confidence in the rough accuracy of the figure chosen for 1910 in view of the convergence of two widely different sets of data. My figure for retail deposits in 1909 is $32,000,000,000. King's figure for total income is $30,500,000,000 for 1910. King's figure seems to me a better figure to use for the purpose in hand. I use my own merely as a rough check on his. For years other than 1910, the figure for net income is calculated as a percentage of King's figure for 1910, by means of an "index of variation." It is assumed that the net income of 1905, for example, bears the same relation to the index for 1905 that the absolute figure for net income of 1910 bears to the index for 1910, and net income for 1905 is then computed by "the rule of three." The index of variation chosen is *railway gross receipts* weighted by *wholesale prices*. I think that railway gross receipts are, on the whole, the most dependable and easily manageable index of physical volume of production that we have, though recognizing difficulties, later to be discussed, in using them for the purpose in hand. Railroads touch virtually every kind of business in the country. Variations in the *pecuniary* volume of production and consumption, however, if due to rising or falling *prices*, rather than to changing physical volume, would not be indicated by changes in railway gross receipts. The same volume of transportation might represent widely varying pecuniary values of goods transported. Railway rates do not vary from year to year with prices of goods, even though high-priced goods are normally charged higher rates than low-priced goods. The index, therefore, must include *prices* as well as physical volume of transportation. For 1910,

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therefore, railway gross receipts and an index of prices are multiplied together, and counted as 100%. The same thing is done for railway gross receipts and prices for other years, and the results reduced to percentages of the result for 1910. The figure for net income in any other year is then readily computed as a percentage of the figure for 1910. The results, for the years 1890–1916, appear in the tables below.[1]

[1] The figures for railway gross receipts are taken from the *Commercial and Financial Chronicle*, rather than from Government reports, in order to get figures for calendar rather than fiscal years, and in order to get the latest possible figures. As the absolute figures are not strictly comparable throughout, the method employed has been to calculate *percentage* gains or losses for the *same roads* for successive years. This would lead to a cumulative error, if large new roads had been built during the period, and had retained their independence. In point of fact, however, the curves for the absolute figures and for the percentage changes run pretty closely parallel down to 1909, at which time a large number of small roads, not previously counted, are brought into the figures. As the number of roads reported varies, the percentage changes on the same roads give us the more accurate measure of year by year variation. It is, at the date of writing (December, 1916), the only possible method for 1916, since the *Chronicle* figures which come to the end of November are based on only 37 roads, with a mileage of 84,452 out of over 240,000 miles usually reported. For these roads, a gain of 19.63%, for the first eleven months of 1916 over the same months in 1915, is reported, and our figures for 1916 rest on the assumption that the gain for the whole year over 1915 is 17.27%. (The greatest gains are for the earlier months, as the end of 1915 was a period of great activity.) Much fuller figures supplied me by Mr. Osmund Phillips, of the *New York Times*, for the first *ten* months of 1915 and 1916 serve to justify this estimate for the gain of 1916 over 1915. For the *Chronicle* data, see vol. 102, p. 930, vol. 103, p. 2112, and *passim*.

The index of prices chosen is Dun's. (See especially *Dun's Review* of May 11, 1907, Jan. 9, 1915, and later months, and the discussion of Dun's index number in the *Bulletin of the United States Bureau of Labor Statistics*, Whole Number 173, July, 1915, pp. 148 *et seq.*) Dun's index number is chosen partly because it is complete for 1916, and partly because it is weighted in accordance with the consumption of different classes of goods, and so particularly suited to this inquiry. I venture to express strong preference for rationally weighted index numbers, and for the use of different index numbers for different purposes. (*Vide* the discussion of index numbers in ch. 19.) Our price index for each year is an average of the twelve monthly figures given by Dun from 1894 to 1916. For the years 1890–94, our price index is an average of the figures for January and July. This average is lower, in most years, than the average for the whole year, and may well

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It may be noticed that my figures for net income in 1900 and 1890 do not correspond very closely with the figures for the same years as independently estimated by King. My figure for 1900 is $12,900,000,000, where his is $17,965,000,000; for 1890, my figure is $9,300,000,000, where his is $12,082,000,000. I am inclined to the view that the figures in my tables come closer to the facts for these years than do his figures, assuming that *his figure* for 1910 is correct. It will be noticed that on his figures there was an increase of about 50% from 1890 to 1900, and an increase of only about 66% in the decade following. This seems to be an unlikely relation. One would expect a much greater rate of increase for the decade 1900–10, as compared with the preceding decade, than King's figures show. The period from 1890 to 1900 included the terrible panic of 1893 and the prolonged depression ensuing. The panic in 1907 was trifling in comparison, and recovery, as shown by our index numbers in the tables below, was very much quicker. Moreover, falling prices characterized much of the earlier decade. The highest prices of the whole ten years were in 1891. The period from 1900 to 1910 is a period of rapidly rising prices, on the whole. On the basis of our general knowledge of the two periods, one would expect a greater percentage gain by far for the second decade, and I therefore trust the results of the index of variation here chosen, which show that. Similar results are obtained by applying to the base figure for 1910 an

be lower than the average for these years, but no attempt has been made to rectify this possible source of error. The index is recalculated from Dun's figures (where it is not a percentage, but a sum of prices), and made a true percentage index, with a base in 1910.

The figures for exports and imports are for *calendar* years. They were obtained, for the years 1890–1909, from *Statistics of the United States, 1867–1909* (National Monetary Commission Report), and, for the years since 1909 from the *Commercial and Financial Chronicle*. For 1916, November and December are estimated.

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index of variation derived from Kemmerer's and Fisher's figures for trade [1] and prices. My figure for 1890 may, moreover, be checked by comparison with the figure given by C. B. Spahr in *The Present Distribution of Wealth in the United States* (p. 105) for the net income of the country for that year: $10,800,000,000. It may be that my figure for 1890 is too low, but I have not sought to "doctor" it by an arbitrary "correction factor" to make it correspond more closely than it does with the other estimates. It is striking enough that a figure derived from an index of variation, twenty years away from its base, should come as close as this to figures calculated from wholly different data.

One brief comment may be made on the significance of these figures. It may be questioned if figures showing the proportions of our industry devoted to supplying goods for the foreign market correctly indicate the importance of the foreign market to us. It may be urged that if we should lose our foreign market, we should merely turn to producing more for the domestic market, and that the loss would not be the whole of our receipts from foreign trade, but merely the cost of transition, and the loss that comes from shifting to production to which we are less suited. This is, doubtless, true. But the loss reckoned this way may well be greater than the loss reckoned on the basis of my figures! It is equally true, moreover, that our domestic trade is not important to the extent indicated by my figures, since if we lose part of our domestic trade, our producers will turn to supplying more for the foreign market. But one must not regard the cost of transition as a negligible matter! The cost may easily be prolonged depression. Certain parts of our foreign trade are really vital to us, both

[1] Their indicia of variation for "trade," though failing to meet the problems for which they were designed, as shown in chs. 13 and 19, are good indicia of variation for physical production and consumption.

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on the import and (to a less degree) on the export side. The most important practical use to which the figures here given may be put are in connection with short-run problems. Foreign trade is so important to us that any sudden alteration in its amount may bring great adversity or great prosperity—as the course of the present War abundantly testifies.[1]

An application of our method to the years 1850 and 1860 gives a percentage for foreign trade of 12.7 in 1850, and 16.0 in 1860.[2]

Certain other cautions are needed in presenting these figures. For one thing, variations in railway rates will make a given volume of gross earnings mean different things in different years as to the physical volume of traffic. In the writer's opinion, which is confirmed by Professor W. Z. Ripley, there is no possible way of making allowance for this, as the cross-currents affecting railway rates are altogether too numerous and obscure. Nor has any effort been made to allow for variations in the proportions of freight and passenger receipts, or of different classes of freight traffic.

Again, the proportions of railway traffic connected with foreign trade may vary greatly, and it may happen that a big increase in railway gross receipts is due to increasing foreign trade, primarily. There is reason to suppose that much of the increase of 1916 is to be explained that way. This makes our comparison for 1916 particularly adverse to foreign trade, since we count as domestic trade what is really foreign trade. The figures, however, are presented

[1] That this should have been seriously denied during the recent Presidential campaign, on the basis of the estimate that foreign trade is minute as compared with domestic trade, gives special point to the present discussion.

[2] King's figures, for which he estimates a margin of error of 25% are used for these years. (*Loc. cit.*, p. 129.) The export and import figures used are for fiscal years.

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as they stand. Moreover, for 1916, the great increase in foreign trade is in *exports*. Merchandise imports are not much greater than in previous years.[1] Our exports have been chiefly paid for by "invisible items," gold and securities, and short term credits. These do not appear anywhere in our figures. A substantial source of error appears from this cause in our 1916 figure. I should think it safe to put the ratio for foreign trade to domestic trade for 1916 at above 20%, instead of the 17.9% our table shows.

The reader will wish to know for a given year how much of the increase or decrease is due to physical growth of business, as represented by railway gross receipts, and how much is due to changes in prices. To give this information, and to make it easy for a critic to check the results, a table showing the index numbers from which the figures for net income are computed is subjoined.[2]

[1] Probably the apparent moderate increase in imports is due wholly to higher prices. The actual physical volume has possibly been reduced, as compared with the period before the War.

[2] I am indebted to several colleagues for advice and criticism in connection with these tables, particularly Professors Taussig and W. M. Persons. Mr. N. J. Silberling has been particularly helpful, aiding in the choice of the statistical sources, suggesting methods of handling and interpreting them, and making virtually all the computations in the tables.

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TABLE I[1]

Calendar Years	1 Net Income of the United States	2 Domestic Trade of United States = Net Income minus Imports at Retail Prices	3 Foreign Trade of United States = Exports at Retail Prices	4 Ratio of Foreign to Domestic Trade
1890	$ 9,300,000,000	$ 8,100,000,000	$1,300,000,000	16.1%
1891	10,400,000,000	9,200,000,000	1,400,000,000	15.2%
1892	10,000,000,000	8,700,000,000	1,400,000,000	16.1%
1893	10,100,000,000	8,900,000,000	1,300,000,000	14.6%
1894	8,300,000,000	7,300,000,000	1,200,000,000	16.5%
1895	8,400,000,000	7,200,000,000	1,200,000,000	16.7%
1896	7,900,000,000	6,900,000,000	1,500,000,000	21.8%
1897	8,000,000,000	6,900,000,000	1,600,000,000	23.2%
1898	9,100,000,000	8,200,000,000	1,900,000,000	23.2%
1899	10,900,000,000	9,700,000,000	1,900,000,000	19.6%
1900	12,900,000,000	11,700,000,000	2,200,000,000	18.8%
1901	14,600,000,000	13,300,000,000	2,200,000,000	16.5%
1902	15,600,000,000	14,200,000,000	2,000,000,000	14.1%
1903	17,700,000,000	16,200,000,000	2,200,000,000	13.6%
1904	18,000,000,000	16,500,000,000	2,200,000,000	13.3%
1905	19,600,000,000	17,800,000,000	2,400,000,000	13.5%
1906	21,500,000,000	19,500,000,000	2,700,000,000	13.8%
1907	26,600,000,000	24,500,000,000	2,900,000,000	11.8%
1908	23,000,000,000	21,300,000,000	2,600,000,000	12.2%
1909	27,600,000,000	25,400,000,000	2,600,000,000	10.2%
1910	30,500,000,000	28,200,000,000	2,800,000,000	9.9%
1911	29,600,000,000	27,300,000,000	3,100,000,000	11.4%
1912	33,800,000,000	31,100,000,000	3,600,000,000	11.6%
1913	34,800,000,000	32,100,000,000	3,700,000,000	11.5%
1914	32,600,000,000	29,900,000,000	3,200,000,000	10.7%
1915	35,400,000,000	32,700,000,000	5,300,000,000	16.4%
1916	49,200,000,000	45,800,000,000	8,200,000,000	17.9%

[1] Retail prices of exports and imports are obtained by adding 50% to the wholesale figures reported, on the assumption that wholesale prices are two-thirds of retail prices. The percentages in the final column are obtained by dividing the figures for foreign trade by the figures for domestic trade. The percentage would reach 100 when foreign trade becomes equal to domestic trade.

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TABLE II. INDEX NUMBERS FROM WHICH THE FIGURES FOR NET INCOME ARE DERIVED

Calendar Years	1 Dun's Prices with base in 1910	2 R. R. Gross Receipts, reduced to base of 1910	3 Composite Index, R. R. Gr. Rcts. multiplied by Prices. (Column 1 × column 2.)	4 Net Income[1] of the United States in billions of dollars: 100:30.5:: (3):x
1890	76.5	39.8	30.8	$ 9.3 billions
1891	81.5	42.0	34.2	10.4
1892	75.6	43.5	32.8	10.0
1893	77.3	42.9	33.2	10.1
1894	71.5	38.1	27.2	8.3
1895	68.0	40.7	27.8	8.4
1896	63.8	40.6	25.9	7.9
1897	62.2	42.4	26.4	8.0
1898	66.4	45.1	29.9	9.1
1899	72.3	49.6	35.8	10.9
1900	78.1	54.0	42.1	12.9
1901	80.6	59.4	47.8	14.6
1902	84.0	62.6	51.3	15.6
1903	83.1	70.1	58.2	17.7
1904	84.0	70.3	59.0	18.0
1905	84.0	76.4	64.2	19.6
1906	88.1	85.0	70.5	21.5
1907	94.0	92.9	86.3	26.6
1908	92.4	81.8	75.6	23.0
1909	99.0	91.7	91.0	27.6
1910	**100.00**	**100.00**	**100.0**	**30.5**
1911	98.1	99.0	97.0	29.6
1912	104.1	106.9	111.0	33.8
1913	101.7	112.5	114.0	34.8
1914	102.5	104.5	107.0	32.6
1915	106.0	110.0	116.0	35.4
1916	125.0	129.0	161.2	49.2

[1] The figures in column 4 are obtained for any year, say 1905, by taking the index in column 3 for 1905, the index in column 3 for 1910, and the absolute figure in column 4 for 1910, and solving by the "rule of three."

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CHAPTER XIV

THE VOLUME OF TRADE AND THE VOLUME OF MONEY AND CREDIT

In the argument so far I have said nothing of the reverse relationship, the dependence of the volume of money and the volume of credit on trade. The two are indeed *inter*-dependent. Interdependence suggests circular theory, and is often a phrase to cover circular reasoning.[1] In the case of the relation under discussion, however, I have, I trust, already abundantly protected myself against the charge of circular reasoning by *denying* that either volume of money and credit on the one hand, or volume of trade on the other hand, is a true cause at all. Both are mere abstract names, designating highly heterogeneous individual occurrences, which, *individually* are cause or effect. In general, both volume of money and credit, on the one hand, and volume of trade on the other hand, are results of common causes, which are the *veræ causæ* of economic phenomena—values, psychological phenomena. The whole thing is to be explained immediately and primarily in terms of social relationships and mental processes,—in terms of social values.

To show that increasing trade tends to increase money and credit is not difficult. If one may venture a hypothetical illustration—and the sort of hypothetical illus-

[1] The notion of interdependence need not involve circular reasoning, if the facts really justify it. The whole cosmos is, doubtless, interdependent. Often certain systems within the cosmos manifest enough *in*dependence of the rest of the universe to justify us, for some purposes, in thinking only of *inter*relations within the systems. The important thing is to make the circle in theory as big as the circle in fact. *Cf. Social Value*, p. 152, n.

trations, like the dodo-bone case, of which quantity theorists are fond make one hesitate to do so—let us assume a communistic community, isolated from other markets, with a developed system of production, including an extensive use of gold in the arts. Let the communistic régime gradually pass over to an individualistic régime. Assume that the inhabitants are acquainted with the use of gold as money, and that their government is willing to coin it freely. As individualism spreads, and trade grows, will not more and more gold be taken to the mints? I am not here concerned with the principles determining the apportionment of gold between the money employment and the arts. It is enough to show that expanding trade tends to increase the volume of money.

Assume that the money supply meets difficulties in its expansion. Is there not at once an incentive to extend credit? The seller finds his customers unwilling to buy for cash, in amounts as great as before. In order to sell as much as before (assuming that the use of credit is known, to avoid trouble with historical origins), he extends credit, —which, when practiced generally, lightens the strain on the money supply.

I have so far said nothing of the case where there are stocks of the money metal to be got from outside markets. But if a country is expanding its trade, does not money come in? The quantity theorists would, indeed, admit this, in general, though their reason is a bad one, namely: that expanding trade lowers prices, and lower prices make the market attractive to foreign buyers, who then send in money for the goods. I shall later discuss this aspect of the theory.[1] For the present, I merely interject the question as to the probability of an expansion of trade when prices are falling. Increasing *stocks* of particular goods may

[1] In chapter XVI.

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well mean lower prices for these goods and if they be articles of export the lower prices may well increase the export trade, and bring money in. But this increase in *stocks* of articles of *export* is very different from total *trade* within the country; and lower prices in articles of export are very different from a generally lower price-level.[1]

Will expanding trade in a country increase credit? I come here to one of the striking features of Fisher's doctrine—a feature in which I think he is fundamentally true to the quantity theory. He finds no way in which expanding trade can directly increase credit. Expanding trade can increase credit, (a) only by changing the habits of the people, so as to alter the ratio, M to M′, or (b) by reducing the price-level, and so bringing in money from abroad, whence, as M is now increased, M′ rises proportionately. "An increase in the volume of trade in any one country, say the United States, ultimately increases the money in circulation (M). In no other way could there be avoided a depression in the price-level in the United States as compared with foreign countries. [He should say, from the standpoint of his theory, that increasing trade will cause a fall in the price-level, and so bring in more money.] *The increase in M brings about a proportionate increase in M′*.[2] Besides this effect, the increase in trade undoubtedly has some effect in modifying the habits of the community with regard to the *proportion* of check and cash transactions, and so tends somewhat to increase M′ relatively to M; as a country grows more commercial the need for the use of checks is more strikingly felt."[3] In a footnote to this paragraph, he defines the issue still more sharply. "This is very far from asserting as Laughlin does that 'The limit

[1] *Cf.* our chapter, *infra*, on "The Quantity Theory and International Gold Movements."

[2] Italics mine.

[3] *Loc. cit.*, p. 165.

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to the increase in legitimate credit operations is always expansible with the increase in the actual movement of goods'; see *Principles of Money*,[1] New York (Scribner), 1903, p. 82. We have seen, in Chapter IV, that deposit currency is proportional to the amount of money; a change in trade may indirectly, *i. e.*, by changing the *habits* of the community, influence the proportion, but, except for transition periods, it cannot influence it directly." [2]

My own explanation of the causal sequence whereby expanding trade brings money into a country would be radically different from that given by Fisher in the first quotation. I should expect, first, that rising *prices* would encourage rising trade; I should then expect the rising volume of trade, with higher prices, to lead borrowers to need, and secure, larger loans from the banks, with, as loans and deposits rise in proportion to reserves, some slight increase in "money-rates," just enough to draw to the country the extra gold which bankers felt desirable to add to their reserves. I should expect the causal sequence to be the exact reverse of that which Fisher indicates. With falling prices, or waning volume of trade—which would usually come together,[3]—I should expect loans to be reduced, deposits to be reduced, money-rates to fall, and gold then to leave the country again. I should expect this sort of thing to happen normally, and not infrequently, and I should expect gold to come in and go out many times in the course of a business cycle. This would seem to be the sort of explanation which our modern theory of *elastic*

[1] The resemblance of the view here maintained to that of Professor Laughlin is at many points close. I am indebted to his *Principles of Money* for many suggestions.

[2] *Loc. cit.*, p. 165, n. The doctrine is reiterated on p. 168.

[3] This is strikingly true in the stock market—the place where more trade takes place than in any other market. See the figures in the preceding chapter with reference to stock transactions, and the chapter on "Bank Assets and Bank Reserves."

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bank-credit would give in connection with this problem. I shall not here go into details with the theory of elastic bank-credit. The theory has been too well established in the debates between the "Currency School" and the "Banking School" [1] in regard to bank-notes to need elaboration and defence here, and the essential identity of deposits and elastic bank-notes from this angle is one of the commonplaces of the literature of banking. What I am here concerned with is the highly significant fact that Fisher's "normal" theory finds no place for this highly important phenomenon. The quantity theory has no explanation of elasticity to give. On the basis of the quantity theory, and for all that the quantity theory can say, the Currency School was right! Fisher offers us, virtually, a "currency theory" of deposits. "Suppose, as has actually been the case in recent years, that the ratio of M′ to M increases in the United States. If the magnitudes in the equations of exchange in other countries with which the United States is connected by trade are constant, the ultimate effect on M is to make it less than what it would otherwise have been, by increasing the exports of gold from the United States or reducing the imports. In no other way can the price-level of the United States be prevented from rising above that of other nations in which we have assumed this level and the other magnitudes in the equation of exchange to be quiescent." (P. 162.) If "bank-notes" be substituted for "M′", in this quotation, we have here a perfect statement of the position of the "Currency School" in that great debate. Must this old issue be fought all over again? And yet, I defy any consistent quantity theorist to find any flaw in Fisher's argument on this point. There is no place for a

[1] For a history of this debate, with bibliography, see Laughlin's *Principles of Money*, ch. 7, on the "History and Literature of the Quantity Theory," esp. pp. 260 and 263–264. Laughlin shows the connection of the currency principle and the quantity theory.

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theory of elastic bank-credit within the confines of the quantity theory. Fisher's recognition of this seems full and complete. He relegates all mention of elastic bank-credit to "transitions." The footnote quoted above, in which Laughlin's (somewhat extreme) doctrine based on the theory of elasticity is stated, denies categorically that there is any validity in it, except for transition periods. There is nowhere in the book any explanation of the theory of elasticity.[1] The references to it are few and grudging,

[1] It may be that in the brief discussion of elastic bank-notes on p. 173 (*loc. cit.*), Fisher means to given an explanation of the theory of elasticity from a quantity theory standpoint. The statement there is that money not only tends to flow away from *places* where prices are high, but also from *times* when money is high. "If the price-level is high in January as compared with the rest of the year, bank-notes will not tend to be issued in large quantities then. On the contrary, people will seek to avoid paying money at high prices and wait till prices are lower. When that time comes they may need more currency; bank-notes and deposits may then expand to meet the excessive demand for loans which may ensue. Thus currency expands when prices are low and contracts when prices are high, and such expansions and contractions tend to lower the high prices and to raise the low prices, thus working toward mutual equality."

If this be the quantity theory account of elasticity—and it would seem to be about the only thing the quantity theory could say—it is about as far from giving an account of the real facts as any theory could be! Something of this sort is suggested, perhaps, by the behavior of Canadian bank-notes, which do expand in the fall, when prices of wheat are lowest, and contract in January, when wheat prices are higher. This grows, however, out of the peculiarities of an agricultural country, and does not at all illustrate the general doctrine maintained. First, wheat prices in the fall are low because wheat is most abundant then. Wheat prices in January, under the influence of speculation, commonly differ from wheat prices in the fall by an amount about equal to the elevator charges, rattage, insurance, interest, and other carrying charges involved. Second, wheat prices are only one element in the general price-level. Low wheat does not prove that the level is necessarily low. A good wheat crop may mean increases in general prices, and often does. Third, and more important, the real reason for an expansion in Canadian notes at such a time is that the wheat *has to be moved*. The farmers do not want to carry it; the speculators are ready to carry it; and it must be sold. Expanding *trade*, at the season, is the cause of expanding bank-notes. The influence of the *price* of wheat is exactly the reverse of that which Fisher assigns. If the price of wheat is low in the crop-moving season, *less* notes will be issued than if the price is high. In other words, the greater the increase in PT, not P or T alone, the greater will be the

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and *always* in connection with the notion of transitions. The most important statement regarding elasticity (less than a page long) is on page 161, where again transitional influences are under discussion. What is a theory of money worth which can offer no explanation of so fundamental, important, and notorious a feature of modern money and banking?

There is a further, related, feature of banking for which the quantity theory can find no explanation. Among the items in a bank's balance sheet, the quantity theorist seizes upon reserves on the assets side, and deposits on the liability side, and builds his theory on the supposed close relation between them. We have seen that this close relation does not, in fact, exist. The range of variation is

expansion of bank-notes. Decrease either P or T, and less notes will be issued.

In general, the phenomenon of elastic bank-credit is the phenomenon of an expanding bank-note or deposit issue accompanied by rising prices and volume of trade, and a decrease when trade and prices decrease. This is all commonplace, but I feel it best to refer to familiar sources to show how old and well recognized my statement of the case is.. The following is from Mill's *Principles of Economics*, Bk. III, ch. 24, par. 1: "Not only has this fixed idea of the currency as the prime agent in the fluctuations of price made them shut their eyes to the multitude of circumstances which, by influencing the expectations of supply, are the true causes of almost all speculations and of almost all fluctuations of price; but in order to bring about the chronological agreement required by their theory, between the variations of bank issues and those of prices, they have played such fantastic tricks with facts and dates as would be thought incredible, if an eminent practical authority had not taken the trouble of meeting them, on the ground of mere history, with an elaborate exposure. I refer, as all conversant with the subject must be aware, to Mr. Tooke's *History of Prices*. The result of Mr. Tooke's investigations was thus stated by himself, in his examination before the Commons Committee on the Bank Charter question in 1832; and the evidences of it stand recorded in his book: 'In point of fact, and historically, as far as my researches have gone, in every signal instance of a rise or fall of prices, the rise or fall has preceded, and therefore could not be the effect of, an enlargement or contraction of the bank circulation.' "

I see nothing in Fisher's discussion of credit to differentiate it from the position of the old Currency School. And the reason is a very simple one: Fisher has followed the quantity theory to its logical conclusions!

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enormous.[1] But there is one close relation in the balance sheet of the bank concerning which the quantity theory is silent, and that is the relation between deposits and *loans*. For individual banks and for banks in the aggregate, for long run periods and for short run periods, for reasons that are clear and inevitable, these two magnitudes (or for banks of issue on the Continent of Europe, *notes* and loans), vary closely together. The relationship between them is the only relationship which does stand out as clearly beyond dispute, among all the items in the banking balance sheet. No assumptions of a "static state" are needed for its demonstration! The relation varies, of course. As banks increase or reduce their capital, as their reserve-percentages rise or fall, as they increase or decrease their holdings of bonds, we find reasons which alter the proportion between deposits and loans. But, despite this, the variation, as shown by figures for the United States, is slight. Assume, for example, a statement showing "loans and discounts" of $1,000,000, deposits, $1,000,000, cash reserve, $200,000. Reserves are then 20% of deposits, and loans are 100% of deposits. If reserves be increased by $100,000 and loans and discounts reduced, to compensate, by $100,000, we have a 50% variation in the ratio of reserves to deposits, with only a 10% variation in the ratio of loans and discounts to deposits. Since cash reserve is much the smaller item, almost always, the same absolute variation in it will affect it, in percentage, vastly more than it will affect loans and discounts. It is strange that a theory should seize on this highly variable ratio of reserves to deposits, and ignore the much more constant ratio [2] of loans and discounts to deposits.

[1] See our chapter on the "Volume of Money and the Volume of Credit."

[2] How close the relation between loans and deposits is may be seen from Professor Mitchell's chart, *Business Cycles*, p. 344. The same chart exhibits the variations in the reserve percentage, which is very much greater.

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That this close relation between deposits and loans should obtain follows naturally from the theory of elastic bank-credit. The two are built up together. When there are expanding business and rising prices, men borrow more from the banks; as they borrow, they receive deposit credits; the individual who receives the deposit credit may check against it, but it is redeposited by another man, and so, while the deposits of one bank need not grow out of its loans, still, for banks in general, deposits are large because loans are large. For a given bank, the relation holds closely, because the bank lends, in general, to active business men, who will have income as well as outgo, and whose income will, on the average, at least balance their outgo. Thus, *through loans*, deposits are linked with volume of trade and prices. Trade and deposits wax and wane together.[1] On the other hand, in the absence of rising prices and increasing trade, reserves may increase greatly without forcing an increase in deposits. Loans cannot increase without an increase in deposits. The linkage between deposits and trade is definite, causal, positive, statistically demonstrable. The linkage between reserves and deposits is, at most, negative—if reserves get too low, deposits and loans may be checked in their expansion. But this—to

The New York Clearing House banks, which we have seen (*supra*, "Volume of Money and Volume of Credit") have a spread of from 24.89% to 37.59% in the yearly average of percentage of reserves to deposits—a spread of over 50%—show a variation in yearly average for the percentage of loans to deposits of only 24.3%—the range being from 83% to 104%. *Ibid.*, pp. 325 and 331. For a partially different series of years, see the chart of J. P. Norton, *Statistical Studies in the New York Money Market*, facing p. 104.

[1] Neither deposits nor loans vary *proportionately* with trade. Very active trade may merely increase the activity of loans and deposits, causing both to be shifted more rapidly—larger outgo, larger income, loans more frequently contracted and paid off, larger amounts "deposited" on a given day, but balances, both of loans and deposits, at the end of the day not increased proportionately with the activity. This is strikingly illustrated in the business of the stockbroker.

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the extent that it is true, which we leave, for detailed analysis, for Part III—gives a very much looser relation indeed than the direct relation between loans and deposits.

The quantity theory has offered no explanation of this relation between loans and deposits. What explanation could a theory offer, which rests in the notion that volume of trade on the one hand, and volume of money and bank-credit on the other hand, are independent magnitudes?[1] I do not mean that quantity *theorists* are silent regarding the relation of loans and deposits. I mean that they do not attempt, in any discussion I have found, to apply the quantity *theory* to the explanation of that relation. What shall we say of a theory which, ignoring these easily proved, easily explained, and vital facts regarding bank-credit, offers as its sole explanation of volume of bank-credit a theory so untenable as that of a fixed ratio between volume of bank-credit and volume of money *in circulation*, with causation running from money to deposits?

Professor Fisher says little about bills of exchange. Here, surely, we have a credit instrument which grows directly out of trade, in general, and whose volume expands and contracts with trade. When banks discount bills of exchange, and issue notes, or grant deposit credits, against such discounted bills, the connection of bank-credit and volume of trade is obvious. The same thing holds largely, however, when promissory notes are discounted. Such notes are usually given by those who plan to use the credits granted in commercial or speculative transactions. The bill of exchange differs from the promissory note in practice, however, in that it itself is often a medium of exchange, without going into the bank's portfolio. "The bill of exchange, therefore, before it gets to the bank *usually*[2] performs a series of monetary transfers, for the small

[1] *Supra*, p. 47.

[2] Italics mine.

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dealer naturally prefers to pass on the bill, if possible, in making a payment, instead of handing it over to his bank, which would either deduct a certain percentage in the way of discount, or else accept the bill at its face value, crediting the customer with the amount on the date of maturity, while business men (other than bankers) are in the habit of taking bills of exchange as they would cash." [1] This quotation describes conditions in Germany. The same authorities (p. 176) give figures showing a rapid development in the volume of bills of exchange, rising from about 13 billions of marks in 1872 to about 31 billions in 1907. These figures show that bills of exchange are a big factor in German business life,—a conclusion that is strengthened when they are compared with the figures for giro-transfers on pp. 188–189 of the same article, or with the figures for note issue on p. 209.[2] In the United States, of course, the use of bills of exchange has become comparatively unimportant in domestic commerce,[3] though there is a movement to revive them, since the new Federal Reserve system has come in. Their chief importance is in connection with foreign trade. Is it possible that Professor Fisher's reason for wishing to minimize foreign trade [4] is the unconscious desire to get

[1] Miscellaneous Articles on German Banking," in *Report of Nat. Mon. Commission*, p. 175. Art. by Max Wittner and Siegfried Wolff.

[2] The figures are not easily compared, as the figures for giro-*transfers* do not indicate the volume of giro-*accounts*, which is doubtless much smaller. I know no estimates for the turnover either of notes or of bills of exchange. To determine what *proportion* of business is done by each would, thus, not be easy. The volume of bills of exchange for the year is three times as great, for 1907, as the figures for note issue. The giro-system, as is well known, is relatively unimportant as compared with notes. But I do not undertake to assign figures showing proportions of business done.

[3] Inland bills of exchanges in connection with the grain trade are still very important, especially at Chicago and Minneapolis. The writer has met frequent reference to cotton bills at St. Louis. Wool bills are frequent in Boston.

[4] *Vide* my criticism of his statistical fallacy in this connection, in the *Annalist* of Feb. 7, 1916. He rules out foreign trade from his "equation of exchange" by the device of assuming that imports and exports cancel one

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rid of the annoying bills of exchange, which so obviously tend to make bank-credit and volume of trade interdependent, and which further spoil the quantity theory by serving as a flexible substitute for both money and deposits?

I regret the necessity for this elementary exposition of familiar things. But Fisher's theory has no place for these familiar things—and Fisher has merely made very explicit the logic of the quantity theory!

As applied to modern conditions, the quantity theory is obliged to assert—and Fisher does assert:

(a) that there is a causal dependence of bank-credit on money, and "normally" a fixed ratio between them;
(b) that velocity of circulation of money and credit instruments are independent of quantity of money and credit instruments;
(c) that, in general, money and volume of credit (taken together), velocities, and trade, are independent magnitudes, each governed by separate laws, though Fisher concedes *some* reaction of trade on velocities;
(d) in particular, that volume of money and credit has no influence on trade, and that trade has no direct influence on volume of credit.

All these doctrines are necessary if the contention that an increase of money will proportionately raise prices is to be maintained, or if it is to be maintained that a decrease in trade will proportionately raise prices. I have analyzed each of these contentions, and I find justification for none of them.

Not yet, however, have we reached the least tenable

another. This, however, to the extent that it is true, makes the bill of exchange more, rather than less, important as a substitute for money and deposits. Fisher, *loc. cit.*, pp. 306, and 374–375. See appendix to chapter XIII of the present book.

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aspect of the quantity theory. There remains the contention that prices are passive, that a change, *originating* in prices, and involving a change in the average price, or the general price-level, cannot maintain itself—that P is a passive function of the other five magnitudes of the equation of exchange. To this central fortress of the quantity theory we shall devote the next chapter.

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CHAPTER XV

THE QUANTITY THEORY: THE "PASSIVENESS OF PRICES"

Is the price-level passive? Is it true that while changes may occur from causes outside the equation of exchange in volume of money, volume of trade, and velocities of circulation, a change in the price-level from causes outside the equation is impossible? Must the average of prices be a passive function of M, the V's, M′ and T? Such is the general contention of the quantity theory, and such, very explicitly, is Fisher's contention. The price-level is always effect, and never cause (with slight modifications of the doctrine for transition periods) in its relations to the other magnitudes in the equation of exchange.

Now in one sense, it is my own contention that the price-*level* can never be a *cause* of anything. The price-level is an *average*. Averages may be *indicia* of causation, but they are not themselves causes. They are not, in reality, anything *at all*. Causation is a matter which pertains to the particulars of which the average is made. But this is not the doctrine of the quantity theory. The quantity theory does, in certain connections, assign causal influence to the level of prices, particularly in the theory of foreign exchange, where the explanation of international gold movements rests on the doctrine that a price-level in one country, higher than the price-level of another country, drives money away.[1] It will be seen, in a moment, that Fisher relies on this principle to prove that the price-level

[1] *Vide* ch. 16 for a more precise statement of this part of quantity theory doctrine.

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of a country cannot rise without an increase of money—if it did so rise, it would drive out the money, and so be forced down again. The point at issue may be stated in terms of particular prices. The quantity theory is that, while particular prices may rise from causes affecting them, as compared with other prices, without a change in money, velocities, etc., still there cannot be a rise in the general average, because other prices will be obliged to go down to compensate. The issue is as to the possibility of a rise in particular prices, uncompensated by a corresponding fall in other particular prices, without a *prior* increase in money, or velocities, or decrease in trade. I take up the issue in this form. I shall maintain that particular prices can, and do, rise, without a *prior* increase in money or bank-deposits, or change in the volume of trade, or in velocity of money or deposits and also without compensating fall in other particular prices. Putting it in terms of Fisher's equation, I shall maintain, as against Fisher, that P can rise through the direct action of factors *outside* the equation of exchange, that as a *consequence of such rise* the other factors readjust themselves, and that a new equilibrium is reached which, in the absence of new disturbances from causes outside the equation, tends to be as permanent and stable as the old equilibrium was.

In the argument which follows, I shall respect thoroughly the distinction between "normal" and "transitional" effects. I do not think that this distinction is properly drawn by Fisher. In my discussion of the relation between the volume of bank-credit and the volume of trade, and in other connections, I have shown that Fisher leaves out of his normal theory most of the concrete factors which do affect both the concrete magnitudes, and the long run *averages*, of the factors in his own equation. But for the present, I shall meet him on his own ground, give his dis-

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tinctions their fullest weight, and carry my argument through the "transition" to a point where no further change among the factors in the equation can be expected as a consequence of the initial change assumed.

Fisher's argument to show the passiveness of prices takes the form of a *reductio ad absurdum*. "To show the untenability of such an idea let us grant for the sake of argument that—in some other way than as effect of changes in M, M′, V, V′, and the Q's—the prices in (say) the United States are changed to (say) double the original level, and let us see what effect this will produce on the other magnitudes in the equation." [1] Then, if the equation of exchange is to be maintained, either M or M′ or their velocities must be increased, or trade must be reduced. But he holds that none of these is possible. (1) Money will be reduced. High prices drive money away to other countries. Nor can gold come in via the mints. "No one will take bullion to the mints when he thereby loses half its value." [2] On the contrary, men will melt down coin. Nor will high prices stimulate mining. Rather, by raising the expenses of mining, they will discourage mining. (2) Bank-deposits cannot increase. Bank-deposits depend on the amount of money, and as that is reduced, they must be reduced, to keep their normal ratio to the volume of money. (3) The appeal to velocities is no more satisfactory. These have been already adjusted to individual convenience.[3] (4) Nor can trade be decreased. Since the average person will not only pay, but also receive, high prices, there is no reason why he should reduce his purchases. "*The price-level is normally the one absolutely passive element in the equation of exchange.*" [4]

"But though it is a fallacy to think that the price-level

[1] *Purchasing Power of Money*, pp. 169–170.
[2] *Ibid.*, p. 170.
[3] *Ibid.*, p. 171.
[4] *Ibid.*, p. 172.

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in one community can, in the long run, affect the money in *that* community, it is true that the price-level in one community may affect the money in *another* community. This proposition has been repeatedly made use of in our discussion, and should be clearly distinguished from the fallacy above mentioned. The price-level in an outside community is an influence outside the equation of exchange of that community, and operates by affecting its money in circulation and not by directly affecting its price-level. *The price-level outside New York City, for instance, affects the price-level in New York City only* via *changes in the money in New York City.*"[1] . . .

"Were it not for the fanatical refusal of some economists to admit that the price-level is in ultimate analysis effect and not cause, we should not be at so great pains to prove it beyond cavil." To explain this "fanatical refusal," Fisher alludes to the "fallacious idea" that the equation of exchange cannot determine the price-level, because the price-level has already been determined by other causes, usually alluded to as "supply and demand." He urges, however, that supply and demand, cost of production, etc., relate, not to the price-level, but only to particular prices: that the price-level is a factor prior to, and independent of, the particular prices, and is presupposed by theories like supply and demand, cost of production, etc.[2]

The *reductio ad absurdum*, at first blush, looks impressive. One obvious criticism suggests itself, however, and it will be found to give a clue to a much more fundamental criticism: is it reasonable to assume a doubling of *all* prices? Above all, must the assumption involve the doubling of the price of gold bullion? Part of the argument to show that gold bullion would not be minted rests on that assumption. But, more fundamental, for such an all round doubling of

[1] *Ibid.*, p. 172. Italics mine.

[2] *Ibid.*, pp. 174–181.

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prices, no *cause* could be assigned. Of course the hypothesis of an increase in prices without any cause is absurd, and Fisher easily disposes of it. But suppose we assign some *concrete causes*, outside the equation of exchange, which might affect prices, and see how the thing works then!

Fisher states on p. 95 that "other elements in the equation of exchange than money and commodities [1] cannot be transported from one place to another." And in the passage quoted above he maintains that price-levels in one country can influence price-levels in another country, or even price-levels in one city can influence price-levels in another city, only *via* changes in money, in the second country or city. But other elements in the equation are *directly* transferable, in fact. *Deposits*, *e. g.*, in London, to the credit of New York bankers, may be transferred to Paris, directly, by *cable* or by *letter*, and *prices* are constantly being directly passed from one country or market to another by the same media. Let us suppose a strong case, to put our principle in relief. Assume an island, which produces a staple widely used, whose chief centre of production is outside the island. Assume that this staple, an agricultural product, rises greatly in price, owing to a blight, which promises to be permanent, in the main producing region. The blight does not affect the island, however. Let this product be the main product of our island, which we shall assume to be small. Let the island have communication with the outside world by boat only once in three months. Let it be, however, in constant communication by cable. Word comes by cable of the rise in the price in the staple. The staple at once rises in the

[1] I call attention, in passing, to Fisher's confusion, in this sentence, of "commodities" with "trade." This occurs frequently in his argument. *Cf.* pp. 225–226, *supra*.

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island. No new money has come in to cause it. Will this be a rise in the price-level? Will there be compensating reductions in the prices of other things to leave the price-level unchanged? What prices can fall? Not the prices of goods that have been imported to the island, surely. They will rather tend to rise, because everybody on the island will feel richer than before, and will be disposed to buy more freely. Meanwhile, merchants and bankers on the island will be more ready to extend credit than before, so that they will be able to buy more freely. What else can fall? Not the prices of the land! Rather, the land will rise in price greatly, because the increased price of the staple, expected to be permanent, will promise bigger rents, and the price of the land, being a *capitalization* of the annual rental, will rise very much more than anything else—it will rise to the extent of the capitalized price of the increase in the rents. Wages, likewise, will rise, since the price of the product of labor has risen. And the capital instruments in use in producing the staple will also rise, though not so much as land and wages, inasmuch as they can be brought in from outside at the end of three months. What is there that can fall—except, perhaps, such goods as are exclusively designed for the construction of poorhouses! A significant particular price rises—that is the first step; then, from causes familiar to all students of economics, other related prices rise; there is a general *sympathetic* rise in prices, the *price-level* has risen independently, from causes *outside the equation of exchange*. But now, can this rise sustain itself? Well, what can bring it down? When the ship comes, at the end of three months, it will bring in additional supplies of the articles of import, and they will go down to their old level. Will they go any lower than the old level? What is there to cause them to do so? The outside price-level should be higher now,

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rather than lower, since the *stock* of the staple in question is reduced, and nothing else increased to compensate. Nor can any reason be assigned why other prices on the island: the staple in question, lands, wages, etc., should fall at all from the level they reached when the news first came.

Incidentally, our ship may also bring in more gold. The bankers, finding their deposits expanding, may feel it well to cable orders for more gold to increase their reserves, especially as they have been subject to somewhat unusual calls for cash for hand to hand circulation—though this last need they might well have been meeting by expanding their note issue.

Is there anything else to be said? Is not the new equilibrium stable? And is not the causal sequence precisely the reverse of that assigned by the quantity theory? *First*, a rise in prices; *second*, an expansion of credit, book-credit, notes and deposits; *third*, money comes in. If anyone is particularly anxious about the equation of exchange in this process, he may add to my expansion of credit an increase in velocities to keep it straight!

I may add that I see nothing in the "transition" I have described to cause trade to be reduced. Rather, I should expect the rising prices to make trade more active—or better, I should expect the rising *values* of goods, etc., of which rising prices are the symptom, to make trade more active, particularly as there would be an increase in speculation to bring about readjustments, and to "discount" the prosperity. Nor can I find any reason why trade should be reduced below the old level in the new normal equilibrium. It would make no difference, however, if trade were reduced either transitionally or normally, since the point at issue is the possibility of a rise in prices originating from causes outside the equation of exchange, and compelling a readjustment of a permanent character in the other factors of the

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equation. The quantity theorist is at liberty to make this readjustment in any way he pleases. My point is made if he has to make the readjustment, and if the price-level stays up!

I have put my illustration in an extreme form to throw the whole thing in relief, and to make the demonstration free from a host of complexities. But is not the causal process essentially the same if we substitute, say, the Southern States for our island, and cotton for our staple? So long as the telegraph bringing news of the ruin of cotton production in India and Egypt, with the higher price of cotton, can come in ahead of the money that the quantity theorist might imagine rushing in a race with it on the train to be offered for the cotton, my point is made. In point of fact, there would be a general rise in prices and wages in the South, which, leading to an expansion of credit, would only gradually and in no definite ratio lead to an increase in money drawn from outside. Buyers outside would pay, not with money, but with checks drawn on New York, and Southern bankers would use their discretion as to how much actual cash they would bring in. With the elastic note issue of our Federal Reserve system, I see no reason to anticipate that money would be drawn to the South in an amount proportionate to the increase in prices. Even if it were, the causation would not run from money to prices, and that is the point at issue. If *rising* prices can cause increasing money, the whole quantity theory is upset, whatever the proportions involved.

It will be noted that my illustration might be put partly in the form of the supply and demand argument. Increasing demand for cotton in the South leads to higher price of cotton; higher price of cotton makes cotton-growers richer, and enables them to increase their demand for imported goods, for land, and for labor. Supply and demand comes

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into conflict with the quantity theory, and does not suffer in the conflict! Supply and demand determine particular prices, and particular prices determine the price-level!

Now I wish to generalize this point. I shall show that the quantity theory conflicts with most of our doctrines of prices, as worked out in our systems of economics. I shall show that, in important cases, the quantity theory conflicts with the law of supply and demand, with the doctrine of cost of production, with the capitalization theory, and with the doctrine of imputation as worked out by the Austrians, whereby the prices of labor, land, and other agents of production rise or fall with the prices of the consumption goods which they produce. I shall show the conflict in important cases, and shall show also, in those cases, that it is not the quantity theory which can be sustained.

The general form of the conflict may be stated for all these theories. They are theories of the *relations* of particular prices, concerned with showing that individual prices are so related that they tend to *vary together*. A rise in one price, according to these theories, tends to bring about *rises* in others, and *vice versa*. The quantity theory, on the other hand, asserts a relation among individual prices such that a rise in one tends to bring about a *fall* in others—it requires a *compensatory* fall at one point, if there has been a rise somewhere else.

Let us take some cases. I shall take, first, the conflict between the quantity theory and the capitalization theory, as I can use the illustration just given in connection with it. I have, in a preceding chapter, given a statement of the capitalization theory. It is a theory concerned with the prices of long-time goods and income-bearers, as lands, houses, capital goods of various sorts that give forth their services through a series of years, stocks, bonds, etc. The

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prices of things of this sort, according to the capitalization [1] theory, depend on two factors: one, the money income expected from the income-bearer, the other, the prevailing rate of interest. This money income, except in the case of bonds, commonly depends on the prices of the products of the income-bearer, or (in the case of stocks) of the products of the concrete capital-goods to which the income-bearer gives title. If we may follow the Austrian division of goods into higher and lower "orders," or "ranks," we may say that the prices of the goods of higher ranks are the capitalizations of the prices of the goods of lower ranks specifically produced by them. Thus, concretely, if the price of wheat rises, we may expect the prices of land to rise, if the rate of interest remains the same. If the price of steel rises, we may expect the stocks of the U. S. Steel corporation to rise, also. If the prices of smokeless powder, and other war munitions soar, we may expect the prices of the stocks of the corporations involved to do precisely what they have done in the recent course of the stock market. All this, on the assumption that the rate of interest does not change, and that the risk factor remains constant. If these factors vary, the results will not present the mathematical exactitude that the formula calls for, but the general tendency will remain the same. On the other hand, if the incomes remain unchanged, but

[1] The capitalization theory is briefly outlined by Böhm-Bawerk, in the critical and historical volume of his *Kapital und Kapitalzins* (English title of the volume, *Capital and Interest*), in his criticisms of the theories of Henry George and Turgot. It has subsequently been elaborated, and much improved, by Fetter, in his *Principles of Economics*, and, more recently, has been restated, with mathematical formulæ, by Fisher, in his *Rate of Interest*. A good brief statement will be found in Seligman, *Principles of Economics*, ch. on "The Capitalization of Value." Extensive use has been made of it by Veblen. More recently, it has been elaborated in the controversy over the theory of interest participated in by Seager, Fisher, Brown and Fetter, in the *American Economic Review*, 1912–13–14, and the *Quarterly Journal of Economics*, 1913.

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the rate of interest rises, then we may expect the capitalized prices to fall, and if the rate of interest falls, we may expect the capitalized prices to rise. From the standpoint of the present discussion, I suppose it might be fairest and best to state the capitalization theory on this point as Fisher himself states it. In his *Elementary Principles of Economics* (ed. 1912) after giving a table showing in figures the difference made in different capital prices by different rates of interest (p. 125) he states (126): "If the value of the benefits derivable from these various articles continues in each case uniform, but the rate of interest is suddenly cut down from 5% to 2½%, there will result a general increase in the capital values, but a very different increase for the different articles. The more enduring ones will be affected the most." And in his book, *The Rate of Interest:* "The orchard whose yield of apples should increase from $1,000 worth to $2,000 worth would itself correspondingly increase in value from, say, $20,000 to something like $40,000 and the ratio of the income to the capital value, would remain about as before, namely, 5%." (P. 15.) On the next page, he generalizes his notion: "One cannot escape this conclusion (as has sometimes been attempted) by supposing the increasing productivity to be universal. It has been asserted, in substance, that though an increase in the productivity of one orchard would not affect the total productivity of capital, and hence would not appreciably affect the rate of interest, yet, if the productivity of all the capital in the world could be doubled, the rate of interest would be doubled. It is true that doubling the productivity of the world's capital would not be entirely without effect upon the rate of interest; but this effect would not be in the simple direct ratio supposed. Indeed, an increase of the productivity of capital would probably result in a decrease, instead of an increase, of the

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rate of interest. *To double the productivity of capital might more than double the value of the capital.*" (*Rate of Interest*, p. 16.)[1] Fisher reiterates this doctrine in his reply to Seager, in the *American Economic Review*, Sept. 1913, pp. 614–615.

Now my concern here is not with the points at issue as between Fisher and Seager: the "impatience" vs. the "productivity" theories of interest. For the present, I shall accept Fisher's doctrine on that point as true.[2] I am here interested in Fisher's doctrine that a doubling of the general productivity of capital would double, or more than double, the prices of capital instruments, including land. How is such a general rise in prices possible, if the quantity theory be true? Is not this a rise in general prices from causes outside the equation of exchange? That Fisher means the *money-prices* of capital goods when he speaks of capital-values is perfectly clear. In the second quotation, he speaks of "capital-value of $40,000"), and in general, his definition of value runs in terms of *price* (*e. g.*, *Purchasing Power of Money*, pp. 3–4, and *Elementary Principles*, p. 17). Fisher has no absolute value concept in his system. We have in the passages cited two doctrines, both of which contradict the quantity theory: (1) that a reduction in the rate of interest will raise capital-prices (which are the largest factor by far in the price-level), and (2) that an increase in the product of capital goods means, not only more money paid for the products, but also more money paid for the production-goods. Incidentally, the

[1] Italics mine.

[2] The criticisms I should make of the present formulations of the time-preference theory of interest, as presented by Böhm-Bawerk, Fetter and Fisher, rest on the individualistic method of approach, and are at many points analogous to the criticisms I have made of the utility theory of value. These criticisms need not affect the points at issue here. On the particular point involved, I agree with Fisher that the productivity theory gives a wrong answer.

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general imputation theory would call for more money paid to laborers as well. How can all this be, on the quantity theory? And what can the poor equation of exchange do in such a case, if money does not increase, if bank-credit is limited by money, if velocities of circulation are fixed by individual habits and convenience, if trade *increases* as a consequence of the increased number of goods produced, and if prices rise? It will not help much to assume that the productivity of gold mines is doubled also. The quantity of money does not depend very much on the annual production of gold. Besides, money need not, from the standpoint of the quantity theory, be made of gold. It might be irredeemable Greenbacks, fixed in quantity by law, or even dodo-bones! Would not the capitalization theory apply in the Greenback Period? I shall not try to solve the riddle. I am not responsible for it!

The conflict between the capitalization theory and the quantity theory may be more simply stated. Assume that the prices of consumers' goods and services rise, quantity of money and volume of exchanges remaining unchanged. On the quantity theory, other prices, the prices of producers' goods and services, lands, and securities, would have to come down enough to compensate, in order that the price-level might remain unchanged. For the capitalization theory, however, the prices of lands, securities, and long time capital goods in general would have to rise, since the incomes on which they are based have risen. Wages of labor engaged in making consumers' goods would also have to rise, on the general imputation theory.

The quantity theory conflicts with the capitalization theory. The quantity theory as presented by Fisher conflicts with the capitalization theory as presented by Fisher. Which theory is true? Would prices rise thus, or would they be held down in some way by the limitations on the

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quantity of money? I hold that I have already proved, in the reasoning given in connection with my hypothetical island, and in the case of the South with its cotton, that the capitalization theory tendency would prevail. The prices of products rise, and then the prices of the labor, land, and other capital goods which have produced them, rise, the rise in the prices of the capital goods behaving in accordance with the laws of the capitalization theory, and all of the rises after the initial rise in products being in accordance with the imputation theory of the Austrians.

This conflict suggests an interesting point. Various elements in our economic theory, added from time to time by different writers, have necessarily come from different philosophical and sociological view-points, and have behind them different philosophical, psychological, and sociological assumptions. The quantity theory, developing, as shown in the chapter on "Supply and Demand and the Value of Money," largely in isolation from the general body of economic theory, has a background of psychological and sociological assumptions quite different from that of many other doctrines. In the chapter on "Dodo-Bones," I stated these assumptions. The quantity theory rests in a psychology of blind habit. It assumes a rigidity in the social system such that it might be likened to a machine, with a hopper into which money is poured, which grinds out prices at the other end. I set this in contrast with the psychological assumptions underlying the commodity theory of money. That theory rests on the "banker's psychology." It assumes a highly reflective and calculating attitude on the part of economic men, with the disposition to look behind appearances for the security, to test things out, to get to bedrock in business affairs. Now the capitalization theory likewise assumes this banker's psychology. In its refinements, as represented by the mathematical formulæ in the appendices of

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Fisher's *Rate of Interest*, it assumes a degree of precision in business calculation which few experts in bond departments apply, and which the highly fluid and alert dealers in Wall Street certainly have not time for, even if they had that degree of mathematical knowledge! In practice, it need not be said, particularly in the case of the prices of lands, the capitalization theory finds its predictions very imperfectly realized! But the two theories, resting in such divergent psychological assumptions, may be expected, *a priori*, to conflict. That they do conflict is not remarkable.

I shall show a similar conflict between the quantity theory and the law of costs. In general, the quantity theorist thinks that he has reconciled his theory with cost theory by pointing out that reduced costs manifest themselves in increasing production, which means increasing trade, which should, on the quantity theory, mean lower prices.[1] I need not, for my purposes, analyze this doctrine in detail, though I am disposed to consider it an accident that the two theories converge at this point. For the present, I shall analyze a case where reducing costs actually come as a consequence of the *reduction* in the volume of trade, and inquire whether such a case will lead, as the cost theory would assert, to lowered general prices, or, as the quantity theory would assert, to *higher* general prices. The case is that where by improved methods of handling goods, it is possible to dispense with middlemen. Concretely, assume that retailers of milk get in direct touch with dairymen, so that middlemen are eliminated, and that as a consequence the price of milk is reduced two cents a quart. What of the general price-level? T (trade) is reduced. There are less exchanges. Volume of trade does not mean volume of goods *produced*, but volume of *exchanges*. With a reduced trade, the quantity theory must assert that prices of com-

[1] *E. g.*, Fisher, *Purchasing Power of Money*, p. 179.

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modities other than milk must, on the average, rise, not merely enough to compensate for the fall in milk, but more than that, enough to compensate for the reduced trade as well. But how can the other prices rise? Well, a point comes up obviously: the buyers of milk save two cents a quart. They can spend it for something else. This will raise the prices of other things. But, on the other hand, the middlemen now have *less* to spend. They have *exactly as much less* as the others have *more*, the extra money that milk buyers have being, in fact, the money that the middlemen would otherwise have had. The one offsets the other. There is, then, no reason for the average of other prices to rise. Suppose we carry the process one step further. After a while, the middleman will find other work to do. Then they will have incomes again to spend. But in going to work again, they will be engaged in production, and so will, in general, be increasing the volume of trade. The quantity theorist could not expect a rise in prices from this!

And here we are given a clue to a fundamental confusion in the quantity theory, a confusion which, accepted by the reader, gives the quantity theory much of its plausibility. I refer to the confusion between *volume of money*, and volume of *money-income*.[1] The two need not be the same. The two generally are not the same. In the case I have described, the one has changed without a change in the other. Now if one wishes to view the process of price-causation from the standpoint of money offered for goods, —an essentially superficial,[2] but frequently useful, view-

[1] This confusion is a companion of the confusion between volume of *goods in existence*, or volume of *production*, and volume of goods *exchanged*. The errors growing out of this confusion have been dealt with in ch. 13, especially pp. 225–226. Virtually all quantity theorists make both these mistakes.

[2] The fundamental causation is psychological, and calls for a theory of *value*, as distinguished from exchange-relations.

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point—it is clearly money-*income*, rather than mere quantity of money in the country that is important. Into the determination of volume of money-income, however, come factors of a high degree of complexity, among them, prices for which there is no possible place within the confines of so simple and mechanical a doctrine as the quantity theory.

In passing, I notice a point to which I called attention in discussing Fisher's factors in the equation of exchange. I refer to his definition of velocity of circulation as the average of "person-turnovers" of money.[1] In the illustration given, there is no reason to suppose that this average is changed. The middlemen simply drop out of the average. They have no money to turn over! But velocity of circulation, defined as "coin-transfer," (*cf. supra*, p. 204) has clearly changed. The course of money has been short-circuited. It goes through fewer hands in the course of a given period. This last concept of velocity of circulation is clearly the one that must be used, if the equation of exchange is to be kept straight. But this fact should make it clear that velocity of circulation, instead of being the inflexible thing that Fisher has described, resting in individual habits and practices, a true causal factor in the price making process, is really a highly flexible thing, in large degree a passive function of trade and prices.

With this distinction between volume of money and volume of money-income [2] clearly held, we are prepared to go further in our attack on the quantity theory, granting

[1] *Supra*, chapter on "Velocity of Circulation."

[2] This distinction is clearly made and developed by von Wieser, in the two articles referred to in our chapter on "Marginal Utility." It is used by him in criticisms of the quantity theory. "Der Geldwert und seine geschichtlichen Veränderungen," *Zeitsch. für Volkswirtschaft, Sozialpolitik und Verwaltung*, XIII, 1904; discussions in *Schriften des Vereins für Sozialpolitik*, 1909, no. 132. A similar distinction runs through J. A. Hobson's *Gold, Prices and Wages*, London, 1913. The present writer had worked out the line of argument here presented before reading either of these discussions.

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the quantity theorist all his most rigorous assumptions, and still demonstrating that prices can vary independently, without prior change in quantity of money, volume of trade, or velocity of money. Let us assume the extreme case of the quantity theory: a closed market; no credit; no barter; a fixed supply of money; a fixed volume of trade; a fixed set of habits affecting velocity, namely, that everyone spends, in the course of the month, all that he has accumulated by the first of the month. The quantity theorist could not ask a more iron-clad set of assumptions than this! If the quantity theory is not valid here, if the price-level is not absolutely fixed, helpless to change, with these assumptions, then the quantity theory, even as a minor tendency, must be surrendered, and the quantity theorist must admit that the whole line of thought has been fallacious. But is the price-level passive? Suppose we assume a combination of employers of maid-servants, which forces down the wages of maid-servants from $20 to $10 per month. Assume further that there is no alternative employment for the maid-servants, so that they all remain at work.[1] So far, we have made a change in *one* price, the price of domestic service. What of the general average of prices, the price-*level?* Well, so far, the price-level is down. If nothing else takes place, we have reduced the price-level by reducing one price. What else can take place? Two things: (1) the masters now have $10 per month each more to spend for other things than before. That tends to raise prices in their other channels of expenditure. (2) The maid-servants now have $10 each less to spend,—the same ten

[1] I have chosen maid-servants, to avoid complications of costs of production in the reasoning that might come if other labor, engaged in producing goods for the market, were selected. To tighten the argument a little further, I assume that the masters receive their monthly incomes on the first day of the month; that they pay the maids on the same day; that the rest of the expenditures, both of masters and maids, are strung out through the rest of the month.

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dollars! That lessens prices in the lines of their expenditure. These last two changes exactly neutralize one another. The first change, in the price of domestic service, remains unneutralized. The general price-level is, then, lowered—by a cause acting from outside the equation of exchange, directly on prices. The first change comes in one price. In the final adjustment, that change remains unneutralized. How is this possible? Is the equation of exchange still valid? As a mathematical formula, yes. As expressing a causal theory, in which prices are effect, and money, trade, and velocity causes, no. The equation is kept straight by a reduction in velocity. *Because* the wages of maid-servants are reduced, *less* money goes through their *hands;* $10 per month per maid are short-circuited. But the *cause* is with the *prices*. The price-level, even under these absolutely rigorous assumptions, is not passive.

In general, I conclude that the price-level, under the laws governing particular prices, supply and demand, cost of production, the capitalization theory, the imputation theory, etc., can vary of its own initiative, independently of prior changes in the quantity of money, or of volume of trade, or other factors that the quantity theory stresses; and that these changes in the price-level (or in the particular prices which govern the price-level) can maintain themselves, and compel a readjustment in trade, credit, money and velocities, to correspond. This conclusion strikes at the very heart of the quantity theory, and, if valid, leaves the quantity theory disproved. More fundamentally, I should put it, prices can change because of changes in the psychological values of goods. These values are *social* values, and are to be explained only by a social psychology. But for the present it has seemed best to me, as a means of attracting sympathetic attention from a wider circle of economists, to make use of the less debated

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doctrines of the science in attacking the quantity theory. It is not necessary to rest the case on my own special theory of value. Supply and demand, cost of production, the capitalization theory, the imputation theory—the general laws of the concatenations and interrelations of prices—are quite adequate for the confutation of the quantity theory. They are laws concerned with particular prices, and the price-level is nothing but the average of particular prices. Whatever explains, really explains, the particular prices, also explains the price-level.

Fisher, as we have seen, is not of this opinion. Although he has defined the price-level as an average of particular prices [1] he none the less exalts this average into a causal entity, prior to and master of the particular prices out of which it is derived, of which it is a mere average.[2] This

[1] *Op. cit.*, p. 27.

[2] A possible alternative interpretation of Professor Fisher's conception is suggested in two or three sentences in the passage of the *Purchasing Power of Money* I have been discussing. On p. 175 he makes a distinction between individual prices *relatively to each other* and the price-level. But the distinction which he *discusses* in the passage as a whole is between the price-level and individual prices *not* considered in relation to each other. Comparison, moreover, with his original enunciation of the notion (Papers and Discussions, 23d Annual Meeting of the American Economic Association, pp. 36–37), would serve to justify the interpretation I give, as nothing at all is said there about super-ratios between individual prices. But the internal evidence is even more convincing. Demand and supply, and cost of production, find their problem, not in the relation between the money price of aspirin and the money price of caviar, but in the money-price of aspirin or the money-price of caviar considered separately. Professor Fisher thus conceives supply and demand in his *Elementary Principles* (p. 260). This interpretation is especially necessary, since Professor Fisher is joining issue with writers who surely use demand and supply and cost of production as means of explaining money-prices, and not super-ratios between them. Further, the price-level is *not*, on Professor Fisher's own scheme, a factor in determining the relations of the prices of sugar and of wheat *inter se*. With a given price-level, wheat might be worth a dollar and sugar nine cents, and the ratio of their money equivalents would be 100:9; with a price-level twice as high, wheat would be worth two dollars, and sugar eighteen cents, but the ratio between their money equivalents would be still 100:9. The whole discussion is quite meaningless unless the contrast be between concrete money-prices of particular goods, and their average. On either

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average, he maintains, is presupposed in the determination of all particular prices.[1] This seems to me a wholly untenable position. *Ex nihilo nihil fit.* There cannot be *more* in the average than there is in the particulars from which it is derived. In point of fact, there is necessarily vastly less. All the concrete causation is lost. The average, in itself, is nothing but a *statement*, a summary of *results*. I know nothing more metaphysical in the history of economic theory than this hypostasis of an average.[2]

I reject Fisher's notion that the average of prices is an independent entity. But I do not consider that the idea lying behind this untenable doctrine is absurd. Cost of production, supply and demand, and the other price theories *do* presuppose something more fundamental. They do presuppose *money*, and the *value* of money, as has been shown at length in Part I. The trouble with Fisher's notion comes in his definition of the value of money in purely relative terms as the *reciprocal of the price-level*, and his contention that the study of the value of money is identical with the study of price-levels.[3] Value is not a mere exchange rela-

interpretation, moreover, my criticism of the exalting of the average into an entity would stand.

[1] *Purchasing Power of Money*, pp. 175–179.

[2] I am glad to find myself in agreement with Professors Laughlin and Kemmerer in holding that this notion of Professor Fisher's is untenable. "The distinction Professor Fisher draws between the prices of individual commodities and the general price-level appears to me, as to Professor Laughlin, to be untenable. It is, moreover, contradictory to his general philosophy of money. His index numbers recognize no general price-level distinct from individual prices. . . . Professor Fisher's illustration of the ocean would be more apposite if he called it a lake whose level was continually changing, and if he considered each particular wave as extending to the bottom." Kemmerer, *Papers and Discussions*, 23d Annual Meeting of the American Economic Association, p. 53. At the same time, I agree with Professor Fisher that there must be something more fundamental than the particular prices to make the scheme work. This something I find in the absolute value of money.

[3] *Loc. cit.*, p. 14.

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tion.[1] Rather, every exchange relation involves *two* values, the values of the two objects exchanged. These two values *causally* determine that exchange relation. In the case of particular prices, then, we must consider not only the value of goods, but also the value of money. And the causes determining the general price-level will therefore include not alone the values of goods, but also the value of money. In the foregoing arguments by which I have shown that the price-level can vary independently of the other factors in the quantity theory scheme, I have been concerned only with changes in the values of goods, measured by a constant unit of value. If the value of money should also be varying, the concrete results on the price-level would have been different. On the face of things, there was nothing in the cases I discussed to require us to suppose that the value of money would also vary. The argument ran on the assumption of a fixed value of money. I have shown, in earlier chapters, that the assumption of a fixed value of money is fundamental to the laws of supply and demand, cost of production, and the capitalization theory. In point of fact, this assumption is rarely true—never strictly true. For causes which are in considerable degree independent of the causes governing the values of goods (as the causes governing their values are in considerable degree independent of one another), the value of money varies, now in the same direction as the values of goods in general, now in an opposite direction. Further, money itself does not escape the general laws of concatenation of values. The value of money has causes which are bound up with the values of other goods. Thus, when prices are rising and trade expanding, there is a tendency—commonly a minor tendency—for money also

[1] *Cf. Social Value*, chs. 2 and 11, and "The Concept of Value Further Considered," *Quart. Jour. of Econ.*, Aug., 1915. See also, *supra*, the chs. on "Value," "Supply and Demand," "Cost of Production," and "Capitalization."

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to rise in value, and so prices do not go quite as high as they would have gone had money remained constant. This tendency arises from the fact that there is more work for money to do in a period of active trade and rising prices. Gold also tends to rise in value in the arts, with prosperity. The reverse tendency manifests itself when prices are falling: money tends, in some measure, to fall in value with the goods,[1] and so prices do not fall as far as they would fall if money remained constant. But in general, the causes governing the values of goods, and the causes governing the value of money, are sufficiently independent to justify us in studying each separately, in abstraction, on the assumption that the other is unchanged. Hence, supply and demand, cost of production, and the other price theories, which assume a fixed value of money, are proper tools of thought for the study of the prices of goods.

[1] This tendency may be more than offset by the increasing significance of money as a "bearer of options" or "store of value" in periods of panic and depression. See, *infra*, the chapter on "The Functions of Money," and Davenport, *Economics of Enterprise*, pp. 301–03.

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CHAPTER XVI

THE QUANTITY THEORY AND INTERNATIONAL GOLD MOVEMENTS

THE quantity theory explanation of international gold movements is as follows: if money comes into a country, it raises prices. If the price-level of the country is raised more rapidly than the price-levels of other countries are rising, then the country becomes a bad place in which to buy and a good place in which to sell; its exports fall off, its imports increase, and finally the inflow of money is checked, and, perhaps, money flows out again. The equilibrium of the gold supplies of different countries is thus dependent on the price-levels of the countries involved. The quantity of gold in a country determines its price-level, and no more gold can stay in a country, on this theory, than that amount which keeps its price-level in proper relation to the price-levels of other countries. It is not necessarily asserted that the price-levels of all countries must be equal—the facts too obviously contradict that. But when this precise statement is not made, the substitute statement of some "normal" relation between the price-level of one country and that of another becomes a very vague one, and the theory becomes pretty indefinite.

I am here concerned chiefly with one contention: the price-*level*, the average of prices, is not a *cause* of anything—not of gold movements or anything else. It is a mere summary of many concrete prices. Some of these concrete prices have highly important influence on international gold movements, tending, if they are low, to bring gold in, and if they are high, to repel gold. Others work in the

opposite direction, tending if they are low to attract less gold than if they are high. Finally, among all the prices affecting international gold movements, the one which is most significant is commonly not included in the price-level at all: I refer to the "price of money," the short-time interest rate.

Let me elaborate each point. First, it is true that high prices of articles which enter easily into international trade tend to repel gold from the country—meaning by "high prices" prices that are higher than the prices of the same goods abroad. This relates, however, not to the general price-level, but only to a comparatively small set of prices. Most prices in a country are not prices of articles of international trade. High wages may, indeed, draw in immigrants. But high land rents, and high prices of land cannot bring in land. Nor do high land prices send away much gold to other countries for the purchase of land there. Indeed, within a single country, the differences in the relation between land yield and capital value of land are enormous. The following figures are taken from an article by J. E. Pope:[1] In Yazoo Co., Mississippi, farm lands are sold at $10 to $25 per acre. The average gross income per acre is $28. In Cass Co., Iowa, the land prices are from $100 to $125 per acre while the gross income amounts to only $11 per acre, if only crops and dairy products are taken into account, and to $20 if the sales of live stock are included. In Oglethorpe Co., Georgia, the average price is from $10 to $25 per acre, and the average income $10. In Paulding Co., Ohio, land is sold at from $75 to $100 per acre, and the average income per acre, including returns from live stock sold, is $15. Why should not landowners in Cass County, Iowa, sell their comparatively unproductive land, at a high price, and go, with

[1] "Agricultural Credit in the United States," *Quart. Jour. of Econ.*, Aug., 1914, p. 708, n.

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their money, to Yazoo County, Mississippi? The answer is simply, that they would have to go *with* their money, and they prefer to stay at home! Absentee landlordism is not generally popular with men who are seeking paying investments. Land stands at one extreme. But then land is the very biggest item in an inventory of wealth, and, while not *as land*, actively bought and sold,[1] it is a big element in the values of many active securities. The principle holds in less degree of many other things, however. The securities of a local corporation, say a gas plant, find their best market at home, as a rule, unless the city be large. If they are held by foreign capitalists, they still find a very restricted market in the foreign country. Only those who have investigated at first hand will feel free in buying them—unless, indeed, they are guaranteed in some way by a big and well-known house. Prices of personal and professional services vary enormously in different sections of the same country, to say nothing of variations between different countries, and there is a very slow movement indeed toward bringing about higher salaries for rural preachers in Kansas because the salaries of London preachers have risen, or because of increased demand for preachers in Germany. Great numbers of commodities are too bulky to move far. Their prices vary with little relation to similar prices elsewhere. But the principle needs no more elaboration. If the reasoning be simply that men tend to buy where things are cheap, and to sell where things are dear, it is clear that that establishes a very loose relation indeed between the price-levels of different countries.

The second point is that some prices, by rising, actually bring in gold from abroad, while by falling they tend to re-

[1] Iowa farm lands are exceedingly active, 18% of the farms being sold annually. The Mississippi lands are much less active. I am indebted to Dr. Pope for information regarding Iowa on this point.

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lease gold. I am not here referring to the case discussed in the chapter on "Supply and Demand," where a commodity, cotton, with an inelastic demand, is doubled, the doubled quantity selling for a less aggregate price, and so bringing in less money from abroad. That case would bear considerable generalization. I am referring here to the case where *credit* is built on the value of long time goods, as lands, or railroads. Concretely, let us suppose an increase in railroad rates allowed by the Public Service Commission of Missouri. This is, in itself a rise in prices. It will, further, on the capitalization theory, make the prices of stocks of the roads operating in the State rise also, and give a margin of additional security for bond-issues. This will make it possible for these roads to float foreign loans (or would have done so before the War), and so will tend to turn the exchanges in our favor. Gold will tend to come in, not to go out. Similarly if the prices of dairy products, or truck gardens, or orchards, or orange groves rise, leading to a rise in the prices of the lands involved, foreign capital will tend to come in as loans—*i. e.*, the exchanges will turn more favorable to us, and the gold movement tend to turn our way. I suppose, by the way, that something of a point could be made against the Single Tax at this point: destroying land values would lessen the security which a community could offer outside lenders. The Single Tax would, thus, hamper the development of countries which need capital from outside. Men who wish to use their own capital, under their own management, might, as the Single Taxers claim, be tempted to come in, if they could be free from taxation on the capital they bring with them; but *lenders*, who wish a good margin of security, would find less inducement to lend.[1] This is a digression, but one feature

[1] The Single Taxer could at least retort that this need not protect landlords in countries, like England, which lend surplus capital abroad.

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of it is pertinent: though the foreigner does not care to migrate from his high-priced land to *low*-priced land elsewhere, he is often willing to trust a *loan* to the owner of *high*-priced land elsewhere. I will not venture the generalization that high-priced land necessarily attracts loans, and tends to turn the gold movements in favor of the country where prices are high. The point has been made that if lands are being exchanged frequently, the new buyer tends to exhaust his credit resources in paying for the land: *i. e.*, puts so large a mortgage on it that he has little margin of security to offer for working capital.[1] I shall not here undertake to determine how far as a matter of fact, in different places, the one tendency outweighs the other. It is enough to point out that in many cases, where this factor is absent (as in the case of the railroads cited), rising prices attract, and do not repel, foreign gold, and that for none of these cases is the consequence of rising prices for the gold movements to be explained in the simple way that the quantity theory doctrine would require.

Finally, the international movements of gold[2] are enormously moved by the short-time rate of interest. The raising of the Bank Rate in England, supplemented, when necessary, by "borrowing from the market" by the Bank of England, as a means of making the Bank Rate effective, quickly turns the course of the exchanges. This is, as has been pointed out, a more effective device when used by the English money-market than when used by borrowing countries, since the borrower, by offering higher rates, is not always able to borrow more, whereas the lender, by demanding higher rates, is usually able to reduce his loans.

[1] *Cf.* Trosien, *Der landwirtschaftliche Kredit und seine durchgreifende Verbesserung*, p. 29, cited by J. E. Pope, *loc. cit.*, p. 705, n.

[2] This was seen by Mill, (*Principles*, Bk. III, ch. viii, par. 4), and has been especially emphasized by Laughlin, *Principles of Money*, ch. 10. *Cf.* A. C. Whitaker's discussion in the *Quart. Jour. of Econ.*, Feb. 1904.

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But the difference is one of degree, and in point of fact a rise in the short time rates in New York City is commonly an effective means of bringing in gold from abroad. It is true that this is not the only factor. I have been at pains to point out how other factors work. I am as far as possible from denying the powerful influence of the "balance of trade" as treated by the older economists on international gold movements, when both visible and invisible items are included. But my point is, first, that these invisible items are numerous and flexible, and that a big factor in their determination is the short time rate of interest; and second, that the balance of physical items, even, depends, not on the price-level as a whole, but merely on the prices of those particular goods which enter into foreign trade. It is perfectly possible, and, indeed, is very common, for rising prices in a country to lead to expanding trade and expanding bank-credit, which causes bankers to wish to expand their reserves, which leads them to raise their rates on short time loans, which leads gold to come in from abroad. More simply still, the bankers may merely offer an attractive rate to the foreign bankers, and establish credits abroad, against which they draw "finance bills," which influence the gold movements in the desired manner.

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CHAPTER XVII

THE QUANTITY THEORY *vs.* GRESHAM'S LAW

THERE is a pretty obvious conflict between the quantity theory and Gresham's Law. The latter is, essentially, a "*quality*" theory of money. For the quantity theory, dodo-bones, or anything else will do. "It is the number, and not the weight, that is essential"![1] For Gresham's Law, the weight makes all the difference in the world, if it is a question as between full weight and light weight coins, and, in general, the *value* of the thing of which money is made, considered in its commodity aspect, is the starting point of that doctrine.

The quantity theorist seeks, indeed, to harmonize the two. His theory is that Gresham's Law manifests itself only when there is a *redundancy* of the currency due to the issue of paper money, or overvalued metal. In such a case, prices rise, he holds, and then the undervalued metal, or the metallic currency, which count no more than the paper or the overvalued metal in circulation, tend to leave the country, to another country where prices are lower, or tend to leave the money use for the arts. But the quantity theorist must maintain that it is only *via* increased issue, with consequent rising prices, that Gresham's Law comes into operation. If there are a million dollars of gold in circulation, and a half million of irredeemable paper is added, then only half a million of the gold (or rather a little less than half) will leave. If more than that left, prices would fall, because of the scarcity of money, and then the

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[1] *Supra*, p. 124, and ch. on "Dodo-Bones."

gold would come back, because it would be worth more in concurrent circulation with the paper than it would be worth as money abroad, or in the arts. On the quantity theory, there can be no difference in the value of gold and paper, in such a case, after enough gold has left to balance the paper that has been issued. Falling prices would prevent it.

But Gresham's Law is not held by any such fetters! And the facts of monetary history, in important cases, show Gresham's Law controlling, despite the quantity theory. I will refer briefly to two such cases.

The first centres about the suspension of specie payments by the Northern banks and the Federal Treasury on January 1, 1862. This suspension was not accompanied by any increase of money. Rather, there was a *decrease*,[1] shortly following, in the amount of paper money. The banks in New York, and certain other States, were bound so strictly by their charters, and by the State laws, that they dared not leave their notes unredeemed. Speculators, buying notes at a discount—for virtually all bank-notes fell to a discount—were able to present them to the banks in these States and demand gold, which led to a very profitable business. The banks protected their gold by ceasing to issue notes, or by reducing the volume of note issue. Certified checks were used to a considerable extent instead. There was certainly no increase, and probably a reduction, a considerable reduction, in the volume of bank-notes in circulation. The only other paper money in circulation was the Demand Notes of the Federal Government, which were not increased after the date of the suspension, and which were in any case small in volume as compared

[1] The Comptroller of the Currency estimates the State bank-notes in 1861 at 202 millions; in 1862, at 183 millions. *Report of the Comptroller of the Currency*, 1915, vol. II, p. 37.

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with the total amount of money. On the quantity theory version of Gresham's Law, there was nothing to drive gold out. Gold was *not pushed out* by redundant currency. Rather, it *left*, leaving a monetary vacuum behind. Coincidently, strangely enough, prices *rose*. The vacuum in the money supply was so serious, that the subsequent first issue of the Greenbacks brought a welcome relief. Throughout the whole of the first year of the suspension, the volume of money was less than it had been in the preceding year. None the less, the gold stayed out of general circulation. It did not come back from abroad. And prices *rose*.[1]

A similar episode, the obverse of this, occurred when the Bank of England *resumed* specie payments in the early '20's. Then gold came back, the currency was increased, and, coincidently, *prices fell*.[2]

I conclude that the conflict between Gresham's Law and the quantity theory is real and fundamental, and that in cases where different *qualities* of money are in concurrent circulation, the undervalued money will leave, regardless of the question of quantity.

[1] W. C. Mitchell, *History of the Greenbacks*, ch. on "The Circulating Medium," and *passim*.

[2] See Conant, *Modern Banks of Issue*, New York, 1896, p. 114. An interesting analysis of the course of the gold premium and of prices during the period of the Bank Restriction in England, and of the controversies relating thereto, will be found in Knies, *Der Credit* (vol. II of *Geld und Credit*), pp. 247 *et seq*. The same period is studied in detail by Thos. Tooke in his *History of Prices*.

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CHAPTER XVIII

THE QUANTITY THEORY AND "WORLD PRICES"

SOME writers, who would call themselves quantity theorists, would repudiate many of the doctrines for which Fisher stands, and which the historical quantity theory involves. The recognition which Fisher's book has received from quantity theorists generally, justifies me in treating his book as the "official" exposition of the modern quantity theory, and, indeed, it is easy to show that Fisher is fundamentally true to the quantity theory tradition. With many writers, the disagreement with Fisher would be a mere matter of degree; they would hold that Fisher has set forth the central principle, that his qualitative reasoning is correct, but that the relations among the factors in his equation are less rigid than he maintains. As I reject even the qualitative reasoning by which Fisher defends his doctrine, and reject even the qualitative tendency which he maintains, my criticisms will apply as well to the position of this group of writers, though I should have less practical differences with them, to the extent that they admit qualifications and exceptions to Fisher's doctrine.

There is, however, a group of writers who seem to feel that the quantity theory remains sufficiently vindicated if it can be shown that an increase in *gold production* tends to raise prices throughout the world, while a check on gold production tends to lower prices, and who rest their case on the necessity which bankers find of keeping reserves in some sort of relation to the expansions of bank-credit.

A view of this sort is presented by J. S. Nicholson, whose

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statement of the application of the quantity theory to the modern world differs almost *toto coelo* from his original statement in the dodo-bone illustration already discussed. Nicholson[1] declares that in our modern society "the quantity of *standard* money, other things remaining the same, determines the general level of prices, whilst, on the other hand, the quantity of *token* money is determined by the general level of prices." Nicholson's reasoning is, substantially, as follows: Although the bulk of exchanging is carried on by means of credit devices, there is still a certain part of exchanging, especially in the matter of paying balances, for which standard money only can be used. He regards the whole credit system as based on standard money, and says that for any given level of prices there is a minimum amount of standard money, absolutely demanded. If the volume of standard money falls below this minimum, the price-level will fall to such a point that the volume of standard money is again adequate. He takes, moreover, a world-wide view, declaring that it is the relation between the volume of gold money throughout the world and the demand for standard money throughout the world which determines the relative values of money and commodities. "The measure of values or the general level of prices throughout the world will be so adjusted that the metals used as currency, or as the basis of substitutes for currency, will be just sufficient for the purpose. We see then, that the value of gold is determined in precisely the same manner as that of any other commodity, according to the equation between supply and demand."

In the consideration of this doctrine, let us note several points in which it differs fundamentally from the quantity theory proper, and from the situation assumed in the dodo-bone illustration. First, it is not a quantity theory of

[1] *Money and Monetary Problems*, p. 105, and preceding.

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money. Money is not regarded as a homogeneous thing, each element having the same influence on prices. Rather, *token* money is the child of prices. This doctrine would in no way fit in with the logic of the equation of exchange, as presented by Fisher. Further, the dodo-bone idea is entirely gone. *Gold*, a commodity with value in non-monetary employments, is under discussion, and it is the quantity of gold that is counted significant. This recognizes, if not the need, at least the *existence*, of a commodity standard. Nicholson definitely avows the necessity for the *redemption* of representative money, even going so far as to say that "all credit rests on a gold basis," [1] that all instruments of exchange derive their value from the volume of standard money which supports them, and that if this basis were cut away the whole structure would fall. Nicholson recognizes, further, that gold has value independent of its use as money.[2]

In evaluating Nicholson's doctrine, I wish to point out, first, the inaccuracy of the statement that all credit rests on a gold basis. It is true that credit instruments are commonly drawn in terms of standard money, which is commonly gold. International credit instruments may even specify gold, and the same thing happens at times within a country. But commonly, in this connection, gold functions, not as the value basis lying behind the credit instrument, the existence of which justifies the extension of the credit, but rather as the *standard of deferred payments*, by means of which the credit instrument may be made definite. The real basis of the value of a mortgage is not a particular sum of gold, but rather the value of the farm, expressed in terms of gold. The basis of a bill of exchange is not a particular sum of gold, but rather is the value of the goods which changed hands when the bill of

[1] Nicholson, *loc. cit.*, 84ff.

[2] *Ibid.*, 76ff.

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exchange was drawn,[1] supplemented by the other possessions of drawer, drawee, and the endorsers through whose hands it has gone. Even a note unsecured by a mortgage, or not given in payment for a particular purchase, is based, in general, on the value of the general property of the man who gives it, and on the value of his anticipated income.[2] So throughout. Credit transactions, for the most part, originate in exchanges, and carry their own basis of security in the goods and securities which change hands, not in that small fraction of the world's wealth, the stock of gold, which could, Coin Harvey asserted in the middle '90's, be put in the Chicago grain-pit! And now let me extend this idea. Although coin made from the standard of value is a great convenience, there is yet no vital need, in theory, for a single dollar, pound or franc made from the standard of value. If gold should cease entirely to be used as a medium of exchange, or in bank or government reserves, if the gold dollar should become a mere formula, so many grains of gold, without there being any coins made of it, still, so long as that number of grains had a definite, ascertainable value, commensurate with the value of some other commodity which could be used as a means of paying balances and redeeming representative money, the gold dollar could still serve as a measure and standard of values. In the situation I have assumed, silver bullion, at the market ratio, could perform all the exchange and reserve functions now performed by gold, even though not so conveniently.[3] Nicholson's description of the use of gold as a reserve, while calling attention to an important fact, has led

[1] *Cf.* Laughlin, J. L., *Principles of Money*, and Scott, W. A., *Money and Banking*.

[2] *Cf. infra*, our discussion of credit. It is not maintained that credit needs to be based on *physical* goods, but it is maintained that credit is based on *values*, which are generally not the value of a sum of gold.

[3] I have elaborated this notion in a hypothetical case in the chapter on "Dodo-Bones," to which I would now refer. See also the analysis of an

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him into the error of supposing that what may be true of gold, the *medium of exchange*, and *reserve for credit operations* is necessarily true of the *standard of value as such.*

Nicholson is correct, however, in looking to the standard of value for part of the explanation of changes in prices. And, *since it so happens* that a considerable part of the value of the standard of value comes from its employment as medium of exchange and reserve, he is correct in looking to its use as money as part of the explanation of its value. His error comes, however, in failing to see that independent changes in the values of goods may also change the price-level, and that variations in the demand for gold as a commodity may also change the value of gold, and so change the price-level.

Further, in so far as Nicholson clings to the notion of prices as depending on a mechanical equilibration of physical quantities, he is subject to the criticisms given before of the general quantity theory, and in so far as he clings to the identity of the value of gold with the reciprocal of the price-level,—the relative conception of value—he is subject to the criticisms already urged.

Again, even for a single country, the connection between volume of reserves and volume of credit is very loose and shifting. A thousand factors besides volume of standard money in a country determine the expansions and contractions of credit, and the long run average of credit. For the whole world, this connection is even looser. To assume a fixed ratio between them for the whole world, one would have to assume that all the world was simultaneously, and normally, straining its possibility of credit expansion to the utmost, so that the minimum ratio—a notion which is far

"ideal credit economy" in the discussion of reserves in the section on Credit, in Part III.

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from precise [1]—should also be the normal maximum, and so that no country, in expanding its credit, could draw in new reserves from other countries which had more quiescent business conditions.

Nicholson's notion of the world price-level, moreover, is subject to the criticisms I have made in the chapter on "The Quantity Theory and International Gold Movements." How can the world level have a close connection with the volume of gold, if different elements in the world price-level, the price-levels of different countries, can vary so widely and divergently as compared with one another? Even granting—which I do not grant, and which I maintain I have disproved—that the price-level in one country has a close connection with its stock of gold, would it not be true that the average price-level for the world would vary greatly, with the same world stock of gold, depending on which countries had the gold?

There is nothing in Nicholson's doctrine which seems to me to justify in any degree the doctrine that prices, in a single country, or in the world at large, show any tendency to *proportional* variation with the quantity of money, or with the world's stock of gold.

Is it not true, then, that there is *some* sort of relation between gold production and world prices? It is. Gold is like other commodities. Its value tends to sink as its quantity is increased. As its value sinks, prices tend to rise. As to the elasticity in the value-curve for gold, I think it will be best to reserve discussion till a later chapter,[2] in Part III. We shall there find reason for thinking that gold has much greater elasticity in this respect than most other commodities. That its value should fall *proportionately* with an increase in its quantity, I should not

[1] *Infra*, the discussion of reserves in Part III.
[2] *Cf.* the chapter on "The Origin of Money," *infra*.

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at all conclude. Even if its value did sink proportionately with an increase, prices would rise proportionately only if the values of goods remained unchanged.

But why do we need a *quantity theory* theory of *money*, with all its artificial assumptions, and its law of strict proportionality, to enable us to assert the simple fact that gold, like other commodities, has a value not independent of its quantity? What theory of money would deny it? Surely not the commodity or bullionist theory. For that theory, which seeks the explanation of the value of money in the value of gold in the arts, it would go without saying that an increase in the supply of gold for the arts would lower its value there and consequently, its value as money. Surely the theory which I shall maintain in Part III of this book will not deny that increased gold production tends to lower the value of money, and consequently to raise prices. With the "quantity theorist" who is content with this conclusion, I have no quarrel—unless he claims this obvious truth as the unique possession of the quantity theory!

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CHAPTER XIX

STATISTICAL DEMONSTRATIONS OF THE QUANTITY THEORY—THE REDISCOVERY OF A BURIED CITY

In the following chapter, as in most of the preceding chapters, constructive doctrine is aimed at, even though the discussion takes, in considerable part, the form of critical analysis of opposing views. We shall seek to set forth the facts, as far as may be, regarding the relations of banking transactions to trade, the relations of clearings to amounts deposited in banks, the relation of New York City clearings to country clearings, and of New York bank transactions to bank transactions in the rest of the country. We shall seek to ascertain the extent of variability in that highly elusive magnitude, "velocity of circulation," particularly "V′." We shall indicate something of the bearing of index numbers of prices on the theory of the value of money as here presented. In reaching conclusions on these and related matters, we shall build on the investigations of Dean Kinley, on the very interesting statistical studies of Kemmerer and Fisher based on Kinley's figures, on investigations more recently made by the American Bankers' Association regarding the relation of bank transactions and bank clearings, on figures from reports by the Comptroller of the Currency, as well as on other sources. One purpose of the chapter is to criticise the statistics which purport to prove the quantity theory. The bulk of the chapter is given to this. But the work of Fisher and Kemmerer thus criticised yields rich rewards for the study. The conclusions they have drawn from their figures are, in the judg-

ment of the writer, untenable, but the figures themselves are of immense interest and importance.

The controversy over the quantity theory has been waged with many weapons. Theory, history, and statistics—to say nothing of invective!—have been freely employed. In large measure, the statistical studies have been concerned with the direct comparison of quantity of money and prices, in their variations from year to year. One of the best of these studies, that of Professor Wesley C. Mitchell, in his *History of the Greenbacks* (followed by his *Gold, Prices and Wages under the Greenback Standard*), has, to the minds of many students, including the present writer, put it beyond the pale of controversy that the fluctuations in the gold premium, and in the level of prices, in the United States during the Greenback period, both for long periods and for daily changes, were not occasioned by changes in the quantity of money,[1] but rather, primarily, by military and political events, and other things affecting the credit of the Federal Government, together with changes affecting the values of gold and of goods. Professor Mitchell's discussion is so detailed and thorough, that what controversy remains relates, not to his facts, but rather to the possibility of interpreting those facts in harmony with the quantity theory, by repudiating the notion that the direct comparison of gold premiums or of prices with quantity of money gives a valid test.[2]

[1] See especially *History of the Greenbacks*, pp. 188ff.; 207–208; 275–279.

[2] Various efforts have been made by adherents of the quantity theory to meet the facts developed by Mitchell with reference to the Greenbacks. Thus, it has been suggested that the coming to par of the Greenbacks shortly before the resumption of specie payments was an accidental coincidence, due to the fact that the volume of trade in the United States just happened to grow to the right amount to bring the Greenbacks to par at that time. No statistical evidence has been offered for this thesis, I believe. It is, indeed, the only logical thing which a quantity theorist could say on the matter, except one alternative, (F. R. Clow, *J. P. E.*, vol. 11, p. 597) namely,

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Recent defenders of the quantity theory have undertaken the examination of more complex statistics than those concerned with the simple concomitance of quantity of money and prices. Two of these studies, the first by Professor

that if the Greenbacks should exist in such quantity that, under the quantity theory, their value ought to fall below the discounted future value of the gold in which they were to be redeemed, speculators would take them out of circulation, holding them for the interest, and so reduce their quantity that the value would rise to that discounted future value. The first thesis, that based on putative changes in the volume of trade, though highly improbable in fact, is logically possible. The second thesis, however (*Purchasing Power of Money*, p. 261) meets serious difficulties. What motive would a speculator have for taking the Greenbacks out of circulation, and hoarding them? The answer is, he gets thereby the "interest," as the Greenbacks approach the date for redemption in gold. If this were the only way in which he could get this gain, the answer would be good. But there is another way in which he can get it, and something more besides, namely, by *lending out* his Greenbacks. In that case, since the creditor gets the full benefit of an appreciating standard of deferred payments, he would get all the "interest" which he could get by hoarding, and, in addition, he would get contract interest on his loan. Of course, if the principle of "appreciation and interest" worked out with perfect smoothness, he would find his contract interest reduced as the other rose, and one might even expect, if the Greenbacks were very redundant, that contract interest would disappear. There is no evidence that this did happen, however! And so long as any contract interest existed, we have a thoroughly valid reason why a holder of Greenbacks would lend them rather than hoard them.

Another effort to harmonize the facts with the theory consists in the contention that *anticipated* future increases in the Greenbacks would work in the same way as actual increases. But this is to shift the whole basis of the quantity theory, which rests in the notion of a mechanical and—in the mass—unconscious equilibration of quantity of money and number of exchanges. The quantity of money is not increased until it is increased! *Cf.* Mill, *Principles*, Bk. III, ch. 12, par. 2, and Jos. F. Johnson, *Money and Currency*, Rev. ed., p. 235.

Professor Fisher has another way to meet the facts of the Greenback régime, and that is by holding that they prove his case! I do not think that anyone, however, who examines the figures he offers on p. 260 (*loc. cit.*) will be impressed by the degree of concomitance between money and prices which they exhibit, especially after Mitchell's careful analysis of changes in detail.

At another point, Professor Fisher maintains (p. 263) that the rapid changes in gold premium which came with news from the military operations (*e. g.*, the 4% drop in Greenbacks after Chickamauga), were due to alterations in velocity of circulation and in volume of trade! As the gold market usually got the news by wire, before the newspapers got it, however, this thesis is not very convincing.

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Kemmerer[1] and the second by Professor Fisher, are so elaborate, have commanded such general attention, and have been accepted by so many students as conclusive demonstrations, that I feel it proper to give them detailed examination. I do this especially because highly important facts for our construction argument emerge from this critical examination. Kemmerer's and Fisher's studies reach high-water mark in the effort to give statistical demonstrations of the quantity theory. If they are invalid, then I know no other attempts which many students would suppose to be possible substitutes. The theory involved in both these studies is clearly stated by Professor Kemmerer: "A study of this kind, to be of any value, must cover the monetary demand as well as the monetary supply. Any test of the validity of the quantity theory consisting merely of a comparison of the amount of money in circulation with the general price-level is as worthless as would be a test of the power of a locomotive by a simple reference to its speed without taking into account the load it was carrying or the grade it was moving over." This criticism of many previous studies is, in general, I think, valid, though I should except from this list such detailed studies as that of W. C. Mitchell, who takes account, as far as may be, of all the variables involved, and who considers day by day and week by week changes. I think the older studies of Tooke,[2] may also be excepted. In point of fact, if one wishes to know how much reliance may be placed in the quantity theory as a basis for prediction, when one knows that money is increasing, the simple comparison of money

[1] Kemmerer, E. W., *Money and Credit Instruments in their Relation to General Prices*, New York, 1907; Fisher, *Purchasing Power of Money*, New York, 1911; subsequent yearly continuations of "The Equation of Exchange" in the *American Economic Review*. The references here, as throughout, are to the 1913 edition of Professor Fisher's book.

[2] *History of Prices*.

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and prices is a fair test. If the "other things" which must be "equal" are so numerous and complex that the quantity theory cannot manifest itself in a direct comparison, much of its significance *as a basis of prediction* is gone.

It is perfectly true, however, that studies running through long periods, which give simply figures for general prices and figures for quantity of money, omitting volume of trade, are not very relevant either for proof or disproof.[1] And the conception underlying the studies of Kemmerer and Fisher, that not merely money and prices, but also volume of bank-credit, volume of trade, velocity of monetary circulation, and velocity of bank-credit, must be measured, undoubtedly represents a big advance in the conception of the statistical problem involved. The mere stating of the problem is an intellectual achievement of no mean order, and the ingenuity and scholarship involved in seeking data for concrete measurement of these highly elusive elements must command the admiration of every student of monetary problems. Volume of trade, velocity of money and velocity of bank-credit had been generally supposed, until these studies were undertaken, to be beyond the reach of the statistician. There can be no doubt at all that the efforts to measure them, or to measure variations in them, by Kemmerer and Fisher, have greatly advanced our general knowledge of the phenomena of money and credit.

With great admiration for the magnificence of the problem undertaken, and for the industry, ingenuity and scholarship which have been devoted to its solution, I have nevertheless reached the conclusion that the figures assigned by these writers to the magnitudes of their "equations of exchange" are, with the exceptions of the figures for money and deposits, widely at variance from the real

[1] To this type would belong Professor Fisher's figures with reference to the years, 1860–66 on p. 260 of his *Purchasing Power of Money*.

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facts in the case, and second, that if they were correct, they could in no sense be said to constitute proof of the quantity theory.

In the critical analysis which follows, chief attention will be devoted to Fisher's statistics. His is the later study, and it follows, in main outlines, the methods laid down by Kemmerer. He has employed Kemmerer's statistics in considerable part, amplifying them for later years, using some data not available when Kemmerer wrote, and undertaking a fuller solution of certain problems than Kemmerer did. I shall, however, from time to time make reference to Kemmerer's figures, and show points of difference between the two studies.

Let me first briefly state the second point of my criticism of these studies: namely, that even if the statistics are correct, they do not constitute proof of the quantity theory. The statistics purport to be concrete data filling out for different years the equation of exchange.[1] But the equation of exchange, as we have seen, does not prove the quantity theory. The quantity theory is a *causal* theory, and causation involves an order *in time*. The concrete figures for the equation do not prove that. Even Kemmerer's concluding chart on p. 148, showing a rough concomitance between "relative circulation" and general prices does not show that changes in relative circulation are *causes* of changes in general prices. The causation might be the reverse for anything his figures tell us. Fisher himself recognizes this, in considerable degree: "As previously remarked, to establish the equation of exchange is not completely to establish the quantity theory of money, for the equation does not reveal which factors are causes and which are effects."[2] Again: "But, to a candid mind, the quantity theory, in the sense in which we have taken it, ought to

[1] This relates particularly to Fisher's figures.

[2] *Loc. cit.*, p. 298.

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appear sufficiently secure without such checking. Its best proof must be *a priori*."[1]

The main criticism here, however, relates to the figures themselves, rather than to their meaning. The figures given by Professor Fisher are concrete magnitudes to fill out his equation of exchange, $MV+M'V' = PT$ [2] for the years since 1896. Thus, for 1909, the figures are: $M = 1.61$ billions; $M' = 6.68$ billions; $V = 21.1$; $V' = 52.8$; $P = \$1$; $T = 387$ billions.[3]

Now in what follows, I shall challenge all these estimates except P for 1909, V for 1896 and 1909, and M and M′ for all years. The figures for M and M′, being the results of fairly simple computations based on Governmental statistics, need not be questioned. P for 1909 is arbitrarily placed at $1.00. V for 1896 and 1909, for reasons which will later appear, is better based than for other years, though Kemmerer and Fisher have differed greatly in their estimates for V, the former placing it at 47 and the latter at 18 or 20.[4] My criticisms with reference to V, however, will relate to the years other than 1909 and 1896.

The sources from which these absolute magnitudes are drawn are, primarily, two investigations by Dean David Kinley, one in 1896 and the other in 1909, in coöperation with the Comptroller of the Currency.[5] The purpose of these investigations was to ascertain the proportions of

[1] *Ibid.*, p. 297.

[2] *Cf.* our chapter, *supra*, on the "Equation of Exchange."

[3] These are the "finally adjusted" figures. *Loc. cit.*, 304.

[4] *Ibid.*, p. 277. Fisher's estimate for V, as corresponding more closely to Kinley's figures for the proportions of money and checks in trade, is to be preferred to Kemmerer's. *Cf.* our comments on this point, *infra*, in this chapter. Even the figures for M′ are not correct, since they do not include deposits growing out of "morning loans," cancelled during the day. *Infra*, ch. 24.

[5] *Report of the Comptroller*, 1896; *The Use of Credit Instruments in Payments in the United States*, National Monetary Commission Report, Washington, 1910.

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checks and money in payments in the United States. Banks of all kinds, national and State banks, trust companies, private banks, etc., were requested by the Comptroller to supply data for a given day (March 16 in 1909) showing what their customers deposited on that day. They were asked to classify these deposits as cash, on the one hand, and as checks, drafts, etc. on the other. They were also asked to give a cross classification of the same deposits, as "retail deposits," "wholesale deposits," and "all other deposits." In 1909, over 12,000 banks of all kinds, out of about 25,000 banks, replied, and of these replies 11,492 were in available form. These replies showed a total of deposits of over 688 millions of dollars. Of this total, 647 millions were in checks, so that checks made up 94.1% of the whole. About 60 millions of this total were retail deposits, about 125 millions were wholesale deposits, and the rest, about 503 millions, were classed in the "all other" category. Kinley's use of these figures, *for his purpose*, seems to me in every way conclusive and safe. He was interested merely in the question of the *proportions* of checks and money in *payments*, retail, wholesale, and "*all other*." The absolute magnitudes of the elements in the equation of exchange he was not trying to measure. Professor Fisher's use of the figures presents a different problem.[1]

Let us consider, first, Professor Fisher's estimate of M′V′, taken together. M′V′ is considered to be equal to the total amount (in dollars) of checks deposited during the year.[2] To get this, for 1909, Kinley's figure, above, for

[1] I am indebted to the *Annalist* for permission to use here materials first published in the *Annalist* in articles by the present writer: "Home vs. Foreign Trade," Feb. 6, 1916; "Tests of Home Trade Volume—a Rejoinder," March 6, 1916; "Home Trade Volume," March 20, 1916, p. 377. To these articles Professor Fisher replied: "A Multi-Billion Dollar Nation," *Annalist*, Feb. 21, 1916; and "Over and Under Counting," *Ibid.*, March 13, 1916.

[2] Except checks deposited by one bank in another. Kinley's figures exclude these in 1909, but not in 1896.

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checks deposited in 11,492 banks on March 16, 1909, is used. This figure is 647 millions. As half the banks had not reported, an estimate for the non-reporting banks was obtained from Professor Weston, who had aided Dean Kinley in the investigation, and who had access to the original data. Professor Weston estimated the total checks deposited during the day at 1.02 billions.[1] The question then arose as to whether this day was typical for the year. Professor Fisher found New York City bank clearings of March 17 (the day after, on which these checks would get into the clearings) to be 28% below the average for the year. He assumed the rest of the country to be half as abnormal as New York City, and increased the 1.02 billions to 1.20 billions, getting what he conceived to be the daily average of checks deposited in the United States in 1909. Multiplying this figure by 303, the number of banking days in New York City (and so, presumably, a fair average for the number of banking days in the country), he obtained 364 billions for the checks deposited in 1909. This figure he considered to be $M'V'$, the volume of bank deposits,[2] multiplied by its velocity of circulation. To obtain V', therefore, his problem was simple: he divided the figure for $M'V'$ by the figure for M' previously obtained from government statistics, and obtained V'.

Now I wish to call attention to three important errors involved in this calculation of $M'V'$ for 1909. (1) The assumption that the total check circulation is the same as the volume of checks actually used in *trade* is a violent one. *Payments* may be tax payments, loans and repayments,

[1] The methods and data employed by Professor Fisher are described at length in his *Purchasing Power of Money*, ch. XII, and Appendix to ch. XII.

[2] M' is the *average* of bank deposits, as shown by the balance sheets, for all banks in the country for the year. Throughout, the reader must distinguish this from the "deposits" of Kinley's figures—amounts "deposited" on March 16.

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gifts, what not. Many checks may be used in a single transaction. Surely not all of this is properly to be counted in the M′V′ of the equation of exchange. But this topic is better discussed in connection with the estimate for T, and I reserve its fuller discussion till then. (2) The assumption that the rest of the country was abnormal in its clearings on March 17, 1909, is a pure assumption, which investigation does not verify. The rest of the country was, in fact, nearly normal! The error that comes for the year from increasing the total on this assumption amounts to at least 31 billions! The total for the year, on Professor Fisher's method of computation, with the correction to make the assumption regarding outside clearings correspond with the facts, is 333 billions, instead of 364 billions! As the figure for 1909 is a basic figure, on which figures for other years are calculated, this error is extremely significant.[1]

(3) A yet more serious error in this computation is the assumption that New York City was complete in Kinley's

[1] It is easier, sometimes, to make an assumption regarding a set of facts than to find out what they are! In this case, some work was involved. Old newspapers had to be hunted up for various cities, and letters had to be written, to find out, for various cities, (a) clearings for March 17, 1909, and (b) the number of banking days in the year 1909. This work was done by Mr. N. J. Silberling, who got figures from 12 cities which had 69% of all clearings outside New York. These cities are: Chicago, Philadelphia, Boston, St. Louis, Pittsburg, San Francisco, Baltimore, New Orleans, Atlanta, Providence, St. Paul, and Seattle. The daily average of clearings for these cities in 1909 was $136,222,436; the actual clearings for March 17, 1909, was $132,961,273. The ratio of average daily clearings to actual clearings on March 17 was 1.0245:1. The increase needed in the figure for deposits outside New York, then, was only 2.45%. Mr. Silberling, wishing to be conservative in view of the 31% of outside clearings not investigated, allows outside clearings to be 3% below normal. On this basis, following Professor Fisher's method of computation, he multiplies the deposits assigned by Professor Fisher to New York by 1.28, and the deposits assigned to the country outside by 1.03, getting total deposits for the day of 1.11 billions, as against Professor Fisher's figure of 1.20 billions, and a total for the year of 333 billions, as against a total obtained by Professor Fisher of 364 billions.

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figures, while the rest of the country was incomplete. This error, as we shall see, largely neutralizes the error above, so far as the "finally adjusted" figure for 1909 is concerned, but it makes a vital difference in the figures for other years, as will appear, since it affects the "weighting" of New York clearings and outside clearings in the index of variation by means of which M′V′ for years other than 1909 is determined. The assumption that New York is complete, in Kinley's figures, and that all of the extra hundreds of millions added by Professor Weston in his estimate for the non-reporting banks belongs to the country outside New York, is made by Professor Fisher both on pp. 444–445, in estimating M′V′ for 1909, and on p. 446, in finding an index of variation for M′V′. The only reason given, so far as I can find, is the following: "This figure, *being for New York*, [Italics mine], is probably nearly complete." (*Loc. cit.*, p. 446.) With this as a basis, Professor Fisher proceeds in his calculations to treat the figure for New York, 239 millions, as absolutely complete, and gives the rest of Professor Weston's 1.02 billions for the day, or 786 millions, to the country outside. The error above mentioned, of assuming the rest of the country to be abnormally low on March 17 in its clearings, still further increases the amount assigned to the rest of the country in the total figures for the year.[1] The conclusion finally is that New York had deposits of 93 billions in checks for the year, while the rest of the country had deposits of 271 billions in checks. As New York clearings for the year were 104 billions, while clearings for the rest of the country were only 62 billions, Professor Fisher concludes that New York clearings overcount New York check deposits, and outside clearings

[1] To this 786 millions is added all that comes from the erroneous assumption regarding outside clearings, when figures for the whole year are obtained. Country deposits, for the year, are thus still further exaggerated by 31 billions!

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greatly undercount outside check deposits, so that, in the index of variation of check deposits, for years other than 1909 and 1896, New York clearings should be given a weight of only 1, while outside clearings should be weighted by 5. "That is, on the basis of 1909 figures, five times the outside clearings plus once the New York clearings should be a good barometer of check transactions." (P. 447.) All this rests on the assumption that New York figures for March 16, 1909, were complete, and the only reason assigned is, "being from New York!"

Now the figures from New York were not complete. And New York clearings do not overcount New York check deposits. Outside clearings do not undercount outside check deposits nearly to the extent that Professor Fisher assumes. For each of these three statements I shall offer what would seem to be conclusive evidence, and I shall attempt to get an estimate of the real relation between New York check transactions and check transactions for the rest of the country.

First, the figures for New York were far from complete. It may be noted that Dean Kinley, in his volume for 1909,[1]

[1] *The Use of Credit Instruments*, etc., p. 152. There is abundant evidence in Dean Kinley's figures that only a decidedly minor part of the amount (373 millions) of checks allowed by Professor Weston for the non-reporting banks could have been outside the larger cities. The amount deposited in a day in a country bank is so small that a great multitude of these banks would be required to show as much as a single New York City institution. Thus, ninety banks (27 national banks, 58 State banks, 3 private banks, 1 stock savings bank, 1 trust company) in Arkansas, report only $728,148 in checks, an average of $8,090 per bank. If all the 13,000 non-reporting banks were country banks, and if this ratio held, we should have 105 millions more for the day (instead of Professor Weston's 373 millions), or 31 billions more for the year. This average is based chiefly on State and national banks. The average is too high for the private banks (whose daily average as reported is $4,010), and for the mutual savings banks (whose daily average is $1,254). It is well above the daily average of the stock savings banks, which are, in many States, practically commercial banks ($6,405). In the non-reporting banks there are comparatively few national banks, and about 5,000 private banks and savings banks, of these the great

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is very careful to repudiate the assumption that the cities were complete more than the country: "Moreover, it is a mere assumption that the non-reporting banks are mainly the small banks in the country districts. *A great many city banks also did not report.*" (Italics mine.) That this is true for New York is abundantly evident from figures there given for the private banks and the trust companies, not to consider at all the State and national banks. New York shows only $1,751 in checks deposited in the "all other deposits" in private banks! This is a city which includes among its private bankers J. P. Morgan & Co., Kuhn, Loeb and Co., J. & W. Seligman & Co., and others! Figures from these banks appear nowhere in Kinley's totals, since deposits made *by* these banks in other banks are also excluded from Kinley's figures.[1] Of course, exact figures cannot be given to show how much New York would be increased had the private banks made full reports. We have no reports of any kind from these institutions. Every feature of their business is kept from the lime light, as far as possible—a practice which is much to be regretted, since it arouses hostility and suspicion, where a statement of the facts in the case would frequently entirely dispel them. We have, however, some information regarding the magnitude of their deposits, meaning by deposits, not

majority being private banks. We cannot make up the 373 millions in the country districts. Nor can we make up the 373 millions by taking in all the reserve and central reserve cities, exclusive of New York. Chicago, in the returns, shows 42.6 millions in checks; St. Louis, 14 millions; Boston, 48.8 millions; Philadelphia, 28.6 millions; the other reserve cities show 40.2 millions—a total of 174 millions. If we doubled the returns for these cities, we should still be 200 millions short of the 373 millions added by Professor Weston to the total! Neither in the country districts, nor in the major cities outside New York can we find enough to make up that addition. Very much of the amount added for non-reporting banks must be found in New York City itself.

[1] Dean Kinley's questionnaire asked the banks reporting their deposits for the day to exclude deposits made by other banks. These deposits were not excluded in the 1896 investigation.

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what Kinley means in this investigation, namely, checks, etc., *deposited* on a given day, but rather, deposits in the balance sheet sense of demand obligations to depositors. In Nov. 1912, J. P. Morgan and Co. held deposits of $114,000,000, exclusive of 49 millions on deposit with their Philadelphia branch of Drexel & Co. About half of these were deposits of interstate corporations. Kuhn-Loeb held, on the average, for the six years preceding 1913 over 17 millions of deposits of interstate corporations. What their aggregate deposits were, we do not know. These figures are obtained from the report of the Pujo Committee.[1] Morgan's deposits were equalled by only three banks and two trust companies in New York (as of April 3, 1915), and Kuhn-Loeb's deposits for interstate corporations alone exceeded the total deposits of any one of the great majority of the New York Clearing House banks and trust companies. Of course, large deposits in the balance sheet sense need not mean large deposits made on a given day. Private bankers' deposits may be inactive. But we know, first, that half of these figures for Morgan, and the whole of the figures given for Kuhn-Loeb, represent the deposits of active business corporations, engaged in interstate business. They are not mere trust funds lying idle, or awaiting investment in securities. What the rest are we can only conjecture. That they are deposits of men and firms connected with the Stock Exchange in some way is highly probable. The whole drift of the statistics presented in this book, and of the argument developed in this book, would serve to show that such deposits are likely to be more than ordinarily active.[2] I refrain from assigning any figures as to the amount of checks deposited in private banks in New York

[1] House Committee on "Money Trust." Feb. 28, 1913. Pp. 57, 78, 145.

[2] *Cf. supra*, and *infra* our discussion of the volume of trade, and *infra*, our discussion of credit, particularly the analysis of bank-loans.

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on March 16, 1909. It must have run high into the millions.[1] It certainly exceeded the two thousands, or less, reported to Kinley! The figures for New York were, thus, incomplete.

But the trust companies were also incomplete. The national banks in New York reported checks totaling 186.5 millions, for all three classes of deposits; the State banks reported only 38.1 millions; the trust companies only 14.2 millions. With aggregate deposits, as shown by their balance sheets, exceeding the deposits of national banks [2] the New York City trust companies reported, as deposited on March 16, 1909, less than half as much as the State banks, less than a tenth as much as the national banks, and only 6.8% of the two combined—5.9% of the total from all three classes of institutions!

These figures are hard to reconcile with the assumption that the trust companies in New York were complete on that date.

It is, of course, possible that the trust companies, though having large deposits, have inactive deposits. This is sometimes held to be the case. But that the difference is so great in activity of deposit accounts between banks and trust companies is hardly credible. I have looked into this matter with considerable care, and have secured information and opinions from men intimately acquainted with the trust companies of New York from the inside. The only available quantitative measure of the activity of deposits would seem to be the volume of a bank's clearings. This is not perfectly accurate, by any means, but it is the best available test. Through the courtesy of a Vice President of one of the largest New York trust companies, I have

[1] *Vide* the opinion expressed by an official of a New York trust company, quoted below, on p. 346.

[2] *Cf.* Horace White, *Money and Banking*, 5th ed., p. 364.

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obtained figures from an official of the Clearing House, which show that in New York trust company clearings run from 20 to 25% of the whole. On this basis, the trust company figures for 1909 were incomplete to the extent of from 33 millions to 46 millions, on the day in question. These clearings figures, however, are for the year, 1915, and not for the period before May, 1911, when the trust companies were admitted to the Clearing House. Prior to that time they did not deal directly with the Clearing House, but *through* the member banks. Do these figures, therefore, represent the situation as it existed in 1909? The possibility was entertained that entering the Clearing House had made a difference in the reserve policy of the trust companies, and so had made them change the character of their business, in such a way as to bring about greater activity of accounts. This question was put to the official of the trust company before mentioned, and his reply is that the State law regarding reserves (passed after the Panic of 1907) had already brought about this change in reserve policy, and so no difference was made upon entering the Clearing House.

The same gentleman, by the way, replying to a question regarding the deposits in private banks in New York, and the influence of such deposits on clearings, writes: "The actual figures could not be obtained from the Clearing House . . . , consequently can only say that deposits made with these houses add to the Clearing House totals very large sums."

There is one piece of evidence which would seem to negative these conclusions regarding the trust companies. In the Report of the New York State Superintendent of Banks, for Dec. 31, 1907, p. xxxv, is a statement that during the two years, 1903–05, the trust companies of New York cleared only 7% as much as the banks. The

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statement relates, however, to a period during which the trust companies not only had no Clearing House membership, which of course was true up to 1911, but also had largely withdrawn from the privilege of clearing *through* member banks.[1] Under these circumstances, even 7% would seem quite high. Inquiry was made of the Honorable Clark Williams, who was State Superintendent of Banks at the time the report was made, as to the source of the figures.[2] Mr. Williams, in reply, defends the figures as correct for that period, but authorizes the writer to quote him as in no way surprised at the percentages given above, 20 to 25% of the total clearings, in view of developments and changes in trust company business.

I conclude that the trust company figures for March 16, 1909, were exceedingly incomplete. The national bank figures were probably more nearly complete than any others, first because they are large, and second, because national banks would feel more obligation than other banks to reply to questions from the Comptroller. The State bank figures, 38.1 millions, as against national bank figures of 186.5 millions, were probably incomplete also, to a con-

[1] Kirkbride and Sterret, *The Modern Trust Co.*, New York, 1905, pp. 59–60; Cannon, *Clearing Houses, Nat. Mon. Com. Report*, p. 178; Conant, *Principles of Money and Banking*, II, p. 244.

[2] Inquiry was also made of Professor George E. Barnett, who had cited the figures given by the New York Supt. of Banks at p. 133 of his *State Banks and Trust Companies*. Professor Barnett writes, in part, as follows: "I made no independent inquiry at the time, and accepted the statement of the superintendent of banks without critical examination of its basis. From what you say, it appears highly probable that he was mistaken in his conclusions. The only question in which I was interested was whether the reserves of the trust companies could be reasonably lower than those of the national banks. I did not care so much about the exact ratio of clearings and only quoted that incidentally." For the purposes which both Professor Barnett and Mr. Williams had in view, the exact ratio was unimportant. The higher figures which I have given above would support the thesis in which both were interested, namely, that trust company accounts are less active than bank accounts, and so lower reserves may be safely held by trust companies than by national banks.

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siderable extent, though State banks are not dominating factors in New York City. That they should exceed the figures for trust companies is surely evidence of the incompleteness of the trust company figures. The private banks are incomplete, with absolute certainty, since they are virtually not represented at all.

Further evidence that the New York figures were incomplete, however, will appear in the data regarding our second thesis, namely, that New York clearings do not overcount New York check deposits. The aggregate check deposits reported from New York, on the date in question, is 239 millions. Clearings for that day were 268 millions,[1] substantially exceeding the reported check deposits. Now do clearings exceed check deposits in New York City?

Evidence with reference to outside clearings, in connection with bank transactions, we now have in very definite and abundant form, and it will be convenient to approach the question of New York clearings, first, indirectly, *via* country clearings. We shall, therefore, take up first the thesis that clearings outside New York do not undercount bank deposits outside New York nearly as much as Professor Fisher thinks. According to his estimate, checks deposited during the year in banks outside New York (exclusive of checks deposited by one bank in another) were 271 billions. (*Loc. cit.*, 446.) Outside clearings were only 62 billions, and his conclusion is that the ratio of deposits to clearings is 4.4 to 1, or, in other words, that outside clearings amount to less than 22.8% of outside check deposits.

Now an extensive investigation, covering the period from June, 1913, to Oct. 1914, inclusive, has been made by the American Bankers' Association, through Mr. O. How-

[1] Fisher, *loc. cit.*, p. 444.

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ard Wolfe, Secretary of the Clearing House Section. This investigation covered cities of various sizes, in various parts of the country. Its results are immensely more trustworthy than any results based on a single day, as Professor Fisher's results are, could be, even had Professor Fisher's method been otherwise correct. An account of this investigation is to be found in the *Annalist* of Dec. 7, 1914.[1] This investigation involves, for the period in question, a comparison of "total bank transactions" in each city with the clearings of that city, together with a summary covering all the cities. "Total bank transactions" consist of all debits against deposit liabilities of each member of the Clearing House, whether they come through the Clearing House or over the counter. They include payrolls, for example, which, of course, never get into clearings. They include drafts on deposits of one bank in another. In a letter to the Editor of the *Annalist*, Mr. Wolfe states that "total bank transactions include all debits against deposit liabilities, whether by check, draft or charge ticket. The only exceptions are certified checks and certain cashier's checks, both of which to an extent represent a duplication." For the period in question, clearings amounted, on the average, for all cities, to 40% of "total transactions." The cities did not include New York City, as stated.

Now we cannot apply this 40% at once to the question in hand. Professor Fisher's 22.8% relates to the relation between clearings and checks and drafts *deposited*, *excluding* items deposited by banks, and excluding, of course, cash deposited. What is the relation between Kinley's "deposits" and Wolfe's "total transactions"?

It is clear that "total transactions" must, in a period of

[1] P. 443. Other discussions of this investigation are in the *Journal of the American Bankers' Association*, Jan. 1914, p. 487; *Ibid.*, Feb. 1915, p. 555; *National Banker*, March, 1915.

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time, *exceed* Kinley's "deposits" very considerably. In a general way, what goes out of a bank, and what comes into a bank, must approximately equal one another in a period of time. In a general way, a depositor finds his income and his outgo balancing. Of course, some accumulate, paying in more than they withdrew, but in general such accounts are made with savings banks. The business man borrows from his bank, getting a "deposit credit" (without "depositing" in Kinley's sense), then checks against his "deposit," then receives checks in payments to himself, "deposits" them, building up his deposit balance again, and then checks against his deposit balance, in favor of the bank, to pay off his loan. What comes in and what goes out—abstracting from the growth of a rapidly expanding bank—balance. But notice, in the case cited above, that "total transactions" include more items than Kinley's "deposits" show. When the bank makes a loan, and gives a deposit credit, this does not, usually, show in Kinley's deposits. When, however, the loan is paid off by a check to the bank, it does show in "total transactions." Moreover, when a man deposits cash in the bank, it does not show in Kinley's figures for checks deposited. When, however, he withdraws cash from the bank, or his check to another is "cashed," it does appear in "total transactions." Further, checks deposited to the credit of one bank in another do not appear in Kinley's figures. Checks drawn, however, by one bank on another do appear in total transactions. How great the difference is between "total transactions" and "deposits" in the banks outside New York we cannot say precisely. The cash items alone, on the basis of Kinley's figures, would make a difference of about 9%.[1] To allow 11%

[1] None of the cities covered in the figures given in the *Annalist* were in New York State. Kinley's figures show that the percentage of checks received in deposits of March 16, 1909, in banks outside New York State was 91%. *Loc. cit.*, p. 180.

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excess to "total transactions" over "deposits" for the other reasons listed, is surely not to make an exaggerated allowance. We thus count "deposits" in Kinley's sense, for the banks outside New York City, as 80% of "total transactions." Since, then, clearings are 40% of "total transactions," they will be 50% of "deposits." This figure is more than twice as great as Professor Fisher's figure of 22.8%. Even if we counted deposits as equalling total transactions, Professor Fisher's estimate would be clearly very much too low.

How, then, do we stand? On Professor Fisher's showing, the overwhelming bulk of checks deposited were in the country outside New York—271 billions for the year, outside, as against 93 billions in New York City. If the ratio (50%) for outside clearings to deposits was the same for 1909 that it was in 1913–14 for the outside banks, we shall have to revise this radically. We have 62 billions of country clearings in 1909; we would have, then, 124 billions [1] of country check deposits! If Fisher's total figure for the country is correct, 353 billions as "finally adjusted," the balance, or 229 billions, would belong to New York! New York clearings, 104 billions, would thus be less than half of New York deposits! If we count outside clearings for 1909 as only 40% of outside check deposits, outside deposits would be, for 1909, only 155 billions, as against Professor Fisher's 271 billions, *a difference of 116 billions!* I am sure that his error in estimating outside check deposits is at least as great as that, and that we cannot assign to New York City less than a major part of the total check deposits of the whole country.

[1] Multiplying the 408 millions of checks deposited outside New York on March 16, 1909 by 303, the assumed number of banking days, gives 123.6 billions. Probably, therefore, 124 billions is too small a figure. But we should be slow in modifying a figure based on 17 months' observations because of the figures from one day's observations.

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This result fits in with the figures actually reported to Dean Kinley, corrected to fit the known facts about March 17 clearings, better than Professor Fisher's estimate, by a good margin. According to Professor Fisher's estimate, New York City checks deposited are only 25.5% of the total. Kinley's actual figures give 239 millions to New York City, and 408 millions to the country outside. But New York clearings were 28% below normal on March 17, while country clearings were only 2.45% below normal. Adding 28% to the figure for New York checks, we get 306 millions. Adding 2.45% to the outside checks, we get 418 millions. Of the total, 724 millions, New York checks would be, then, 42.3%. We have shown reasons for considering New York deposits to be very incomplete for March 16, particularly as regards the private banks and trust companies. Comparison of the New York figures with the results indicated by the ratio of country clearings to country deposits would thus indicate that New York was much less complete than the country as a whole. Even so, I need to add but 7.3% of the total to Kinley's actual figures for New York, corrected in the light of next day clearings, to give New York half of the check deposits. Professor Fisher must subtract 16.8% of the total from the actual figures for New York, as corrected in the light of next day's clearings, in order to get his figure of 25.5%. To vary as widely from the actually reported figures as Professor Fisher does, I should have to assign 59.1% of total check deposits to New York City. I refrain from making an exact estimate. I am content with the conclusion that something more than half of the checks deposited in 1909 were in New York. This seems to be too clear for serious controversy.

The indirect approach to the relation between New York clearings and New York deposits, *via* the study of outside

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clearings in 1913 and 1914, taken in conjunction with the figures for check deposits in 1909, would seem to make it quite clear that New York clearings do not exceed New York deposits, or, indeed, constitute a substantially higher percentage of them than is the case with country clearings and deposits.[1] Logically, assuming the correctness of the estimate for checks deposited, the case is complete: we have a simple problem in arithmetic: given country clearings for 1909, 62 billions; given the ratio of country clearings to country deposits (and a minimum for this ratio is clearly given, in the 40% which country clearings are of "total transactions"), we can fix a maximum for country deposits, which is 155 billions. Then, given our estimate of 353 billions for total check deposits, we subtract the maximum possible for country deposits from it, and get a minimum possible for New York City of 198 billions of check deposits. Comparing this with the known clearings of 104 billions in New York, we find that New York clearings constitute, as a maximum possible, 52.5% of New York check deposits. If the reasons given for holding check deposits in the country to be less than total transactions are accepted, the ratio of clearings to deposits in New York City is lower.

Indirect calculations, however, even when logically complete, ought to be checked up by other methods, when possible. We have some further data, drawn from an earlier period, 1890–91–92, which suggest the same conclusion.

The reason commonly offered for holding that New York

[1] I have greater confidence in this conclusion, since seeing a letter from Mr. Howard Wolfe, who made the investigation of outside clearings and "total transactions" for the American Bankers' Association, to Mr. Osmund Phillips, Editor of the *Annalist*. Mr. Wolfe writes: "I do not believe that the experience of the New York banks would differ from that of other institutions which now supply [these figures]."

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clearings exaggerate local New York transactions, as compared with country clearings and country transactions, is that New York is the clearing house for the country. Country banks send their idle cash there; country banks pay other banks by drafts on their New York balances; country banks send out of town checks to New York for collection; business men in St. Louis pay business men in Chicago with New York exchange, etc. These items are supposed greatly to swell New York clearings.

Now several of these reasons are not at all valid. Cash shipped back and forth between New York and the interior does not get into clearings. Secondly, New York, because of the charges made for collecting out of town checks, has tended to lose much of the collection business. Chicago probably does a great deal more of it than New York does.[1] However, even if checks on out of town banks were sent largely to New York for collection, they would not get into the clearings. New York banks send checks on country banks directly to country correspondents. Checks on out of town banks sent in for collection do swell clearings in Boston and Kansas City, where arrangements have been made, to the advantage of all concerned, to have the clearing houses handle this business. But New York has not made provision for it.[2] The only checks that get into New York clearings will be checks drawn on New York banks.[3]

[1] My information on this point comes from Professor O. M. W. Sprague. It is corroborated by an official of the Bankers Trust Company in New York.

[2] *Vide* Rodney Dean, of the Fifth Avenue Bank, New York, "The Problem of Collecting Transit Items," *Journal of the American Bankers' Association*, Jan. 1914, p. 537. Boston inaugurated the system in 1899–1900; Kansas City five years later. Since the above was written, I have learned that New York, in recent months, has introduced the new system. This does not affect our argument regarding the figures for 1909.

[3] Since the foregoing was written, my attention has been called by Mr. Osmund Phillips, Financial Editor of the New York *Times*, and Editor of the *Annalist*, to indirect ways in which items on out of town banks sent to

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These checks will be of two kinds: (1) checks drawn by individuals and firms on New York banks. These checks will commonly be drawn by people in New York, and, in so far as they come from out of town, will represent business between New York and other places, hence, New York business. (2) Drafts by banks on their New York balances. These will be of three kinds: (a) drafts sold, especially by country banks, to their customers who need to make payments in other cities. Many of these will represent payments to New Yorkers for transactions between New York and the country, hence New York business, and will appear in the check deposits of individuals, firms, and corporations in New York. (b) There will also be drafts from one country bank, on New York, to another

New York for collection will affect New York clearings. Country correspondent banks to which New York banks send these items for collection, may remit for them in four ways: (1) by sending cash; (2) by sending items on out-of-town banks, which the New York bank will send on to some other correspondent for collection; (3) by draft on the New York bank which has sent the items to be collected; (4) by draft on some other New York bank. In the last case, New York clearings are affected. The first case is not, quantitatively, important. The second and third cases would seem to be the normal types, assuming correspondent relations between New York banks and country banks to be *reciprocal*, since the New York bank would be disposed, as far as possible, to turn over its collection business to its own depositors among the country banks. Mr. Phillips says, however, that the fourth case is important. To the extent that this is true, our conclusion that out of town collection items do not affect New York clearings must be modified, and it becomes a matter of importance whether these items are large or small. My information, as stated above, is that Chicago exceeds New York City in this.

If, however, the Kansas City and Boston arrangements held in New York, these collection items would be represented *twice* in New York clearings. The fact that the items do not themselves get into the clearings remains.

Direct information regarding New York clearings is very desirable. Our indirect approach must be considered inconclusive until more detailed figures for New York City are at hand. We need figures covering all types of banks in New York, for a period of, say, a year (to allow for seasonal changes), in which deposits made by one bank in another are separated from other deposits. National banks alone would exaggerate the item of deposits by one bank in another, especially as they are the depositories of the great private banks.

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country bank, in which New York is truly being used as a clearing house, New York exchange taking the place of an intercity shipment of cash.[1] (c) Drafts by New York banks on New York banks, to avoid deficits at the Clearing House, or—especially in the case of private bankers, between whom and brokers the line is hard to draw,—for general purposes.

Now, fortunately, we have some data, trustworthy, even though old, for the volume of bank-drafts on New York, and, more important, for the proportion of drafts on New York to drafts on banks in other cities. These figures are, as stated, from the three years, 1890, 1891, and 1892. For the purpose in hand, however, they are relevant, since then, as now, New York clearings were nearly twice as great, on the whole, as country clearings, and if this excess of New York clearings is due to that cause, it should have manifested itself in these figures. If the proportion of these drafts on New York to the total of bank-drafts was greater than the proportion of New York clearings of total clearings, we might find reason for supposing that New York clearings were unduly swelled by this fact. But in fact, drafts on New York are not out of proportion. The figures are virtually complete for drafts drawn by all the national banks on national and other banks for the years in question. They will be found in the Comptroller's *Reports* for the three years, under the caption, "Domestic Exchanges." For 1890 the figures are:

[1] Or, in some cases, taking the place of cash dealings between banks and a local clearing house. On the face of it, it is incredible that *balances* between cities, or *within* cities, after the country clearing houses have done their work, should be so great as to account for a very great part of New York clearings. These balances between cities other than New York, and balances within country clearing houses, must be a minor fraction of *country* clearings, and country clearings are little more than half of New York clearings. Ordinary commerce, as shown in chapter XIII, cannot give rise to great sums in the aggregate, to say nothing of giving rise to great *balances*.

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Drafts on	(000,000 omitted)	
New York	$ 7,284	(63.07%)
Chicago	1,084	(9.39%)
St. Louis	188	(1.64%)
Other reserve cities	2,537	(21.88%)
Other cities	464	(4.02%)
Total	11,550	(100%)

The Comptroller (*Report* of 1890, p. 19) gives an estimate for drafts drawn by State and private banks of an additional 6,089 millions. He does not try to apportion these among New York and the other cities. There is no reason to suppose that the percentage for these banks of drafts drawn on New York would be higher than for national banks, and there is some reason for supposing that they would be lower: namely, that these institutions would lack the incentive supplied by the National Bank Act for depositing reserves in a Central Reserve City. The Comptroller's figures probably do not include the great private banks in New York, which deposit in New York commercial banks, and draw huge checks against their deposits. These checks, probably, however, chiefly represent stock exchange collateral loans to brokers, and so appear in brokers' deposits as well as in New York clearings—represent New York deposits. I do not use this estimate in my computations. If I did, the results, so far as proportions are concerned, would be the same, since I could do nothing but assign the same proportions to them. It will be seen that my argument rests on the proportions, chiefly.

Now what difference would be made if we wiped out all these draft transactions, and reduced clearings to correspond? New York clearings in 1890 were 37,660 millions; country clearings were 21,184 millions. Let us subtract the drafts on New York from New York clearings, and the drafts on other places from the country clearings. The re-

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sult is: New York clearings, 30,376 millions; country clearings, 16,918 millions. New York clearings still retain their former status! New York clearings are still nearly twice as great as country clearings! It is not the bank drafts used in making New York the "clearing house" for the country that swell New York clearings as compared with the rest of the country! It is something else! The main explanation, as we have in part seen, and shall further see, is a mass of speculative transactions, chiefly Stock Exchange transactions, and loan transactions connected therewith! New York clearings grow out of New York business, primarily.

The figures for the other two years vary little from those of 1890. What variation there is shows a growth of drafts on interior cities, and a decline of drafts on New York. New York showed 63.07% of these drafts in 1890, 61% in 1891, and 60.77% in 1892.[1]

As we have seen, the only checks or drafts that get into New York clearings are those drawn on New York banks. The checks on New York banks probably almost all represent business in which one party is a New York individual, firm, or corporation. The drafts by out-of-town banks will contain all the items, virtually, that represent "clearings" through New York. Not all of these, by any means, will represent such clearings. A very substantial part of them will represent exchange sold to customers to make payments in New York. We exaggerate the "clearing through New York" when we subtract all these drafts from New York clearings. Since, however, we treat country clearings in the same way, no error results, so far as the proportions between them are concerned.

The two sets of data converge. Both from the figures

[1] The whole thing is summed up on p. 25 of the Comptroller's *Report* for 1892.

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of 1913–14, in conjunction with estimated check circulation in 1909, and from the figures of 1890–92, can we conclude that New York clearings do not overcount New York transactions. The conclusion would seem to be inevitable that New York is really as important in our volume of banking transactions as its clearings would indicate. This may be qualified by a recognition of the possibility that New York clearings are more efficient in handling check deposits than are clearings in other cities. Some scattering data from national banks for single days at a time indicate that a higher percentage of checks is cleared in New York than elsewhere in the country,[1] and one observation for five national banks for a ten-day period shows 67% of checks deposited cleared.[2] These checks include deposits made by other banks, as do the figures of Kemmerer's observations. But there are no direct observations covering New York for a long enough period, or for enough institutions, to warrant any definite conclusions.[3]

[1] *Cf.* Kemmerer, *Money and Credit Instruments*, p. 117.

[2] *Annalist*, July 6, 1914, p. 8. The editor of the *Annalist* gives me the following information: data for twenty banks, six in New York and fourteen in Chicago, Philadelphia, Boston, and St. Louis, for the week, Aug. 28–Sept. 2, 1916, show that clearings are 71% of "total transactions" in New York, and about 40% in the other cities. These figures are all for national banks, except for one bank in St. Louis.

[3] There is one further generalization developed in connection with Mr. Wolfe's investigation of the ratio of clearings to "total transactions" which seems to have relevance here, though I am not sure how it should be interpreted. The average ratio, as stated, is about 40%. This varies, however, for different cities. "The rule seems to be that the larger the proportion of bank deposits to individual deposits, the smaller will be the figure representing this ratio. In Cincinnati, for example, it is 31.4% while in Los Angeles it is 59.7%." (*Jour. of American Bankers' Ass'n*, Jan. 1914, p. 487.) How safely based this generalization is cannot be told from the context, as no further facts are offered. Nor is its bearing on the question at issue, as to whether or not New York clearings bear a higher ratio to New York deposits than country clearings do to country deposits, entirely clear. It would seem to indicate that deposits made by outside bankers in the banks of reserve cities make smaller contributions to clearings than individual deposits do, and this would fit in with the fact

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The error of assuming clearings of March 17 in the country outside New York to be abnormally low, swelled Professor Fisher's total figure for check circulation by 31 billions, as we have seen. On the other hand, the error of assuming New York City to be complete in Kinley's figures tended to make the total smaller than it would have been, since New York City was 28% below normal, and an increase of 28% applied to half of Professor Weston's figure of 1.02 billions, gives about 70 millions more for the day, or 21 billions more for the year, than when the 28% increase is applied to only a quarter of Professor Weston's figure. These two errors roughly neutralize one another, and we may accept Professor Fisher's "finally adjusted" estimate of 353 billions [1] for the year as roughly approximating the amount of checks deposited.[2] How "rough" an estimate one gets by taking a single day as the basis for a year need not be here discussed. I should be disposed to think that an indirect calculation, *via* clearings, in view of our more extensive knowledge of the relation of clearings to "total transactions," might well be worth more, so far as deposits outside New York are concerned. Since, however, we lack any extended figures for the relation of transactions and clearings in New York, and since even for the country we are obliged to make guesses as to the relation of "checks deposited" to "total transactions," I refrain from trying to improve further on Professor Fisher's estimate for checks deposited in 1909—even though

that checks on outside banks, deposited for collection by one bank in another, do not get into clearings. What further explanation or significance it has I leave to the reader. It is possible that there are a number of important relevant facts missing regarding New York clearings, and that the conclusions here reached may require later revision.

[1] *Loc. cit.*, p. 304.

[2] But not as a correct estimate of M′V′ for the equation of exchange! We do not know what part of these checks were used in "trade." *Cf.* our discussion of the estimate of T, *infra*.

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questioning that "check deposits" and M'V' are identical.

What, however, shall we say of M'V' for other years? In the calculation of this, Professor Fisher relies on the absolute figures for 1909 (and 1896, similarly calculated), together with an "index" based on New York and country clearings. In this index he weights country clearings by 5,[1] and New York clearings by 1. The result is, of course, that country clearings dominate the index. But New York clearings are much more variable than country clearings. The range of variation in New York clearings for the years 1897 to 1908, inclusive, is from 33.4 billions in 1897, to 104.7 billions, in 1906; the latter figure being more than three times as great as the former. The range in country clearings is from 23.8 billions, in 1897, to 57.8 billions, in 1907, the latter figure being 2 10/23 as great as the former. But more significant is the degree of *year by year* variability. The country clearings, with the exception of 1908, always rise,—a steady, if not quite symmetrical, increase. New York clearings, however, go up and down, 42 billions in 1898, 60.8 billions in 1899, 52.6 billions in 1900, 79.4 billions in 1901, 66.0 billions in 1903, 104.7 billions in 1906, 87.2 billions in 1907, 79.3 billions in 1908. New York clearings are highly variable in both directions, while country clearings vary almost wholly in one direction, with a maximum difference of 6.4 billions between any two consecutive years, and with an average yearly variation of only 3.5 billions.[2] When country clearings are weighted by 5, almost all of the high degree of variabil-

[1] Kemmerer does not do this, but takes total clearings for the country as his index of variation. *Loc. cit.*, 118–120. His figures for "check circulation" are, thus, more variable than Fisher's. In this, Kemmerer's results are much to be preferred.

[2] I have taken the figures for clearings from Professor Fisher's table, *loc. cit.*, p. 448.

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ity of New York clearings is covered up, and volume of checks deposited for years other than 1909 and 1896 is thrown hopelessly away from the facts. It is too large by far in most years. In 1905, 1906 and probably 1901 it is too small. It does not vary nearly enough. As V′ for years other than 1909 and 1896 is determined, for Professor Fisher's equation, by dividing the M′V′ thus estimated by the M′ for the year, it is clear that V′ as estimated by Professor Fisher is very much less variable than it is in fact. It is pretty variable even in his figures, but his figures do not nearly show how variable it is.[1]

Again, this undue weighting of country clearings, swallowing up New York, vitiates Professor Fisher's estimates for V, the velocity of money, for years other than 1909 and 1896. One of the elements in the calculation of V is the estimated V′.[2] Since V′ is wrong, V will also be wrong. V is probably much more variable than Professor Fisher's figures would indicate. With great admiration for the ingenuity of Professor Fisher's speculations regarding V, I find too many elements of conjecture, and too many arbitrary assumptions, to give me confidence in the figure for any year. I refrain from going into any general criticism of his method of calculating V, however, contenting myself with the one clear point that, to the extent that the values of V for years other than 1909 and 1896 depend on the estimated M′V′ for those years, they are less variable than they ought to be.[3]

The same conclusion regarding Professor Fisher's estimates for V′ have been reached, by a different method, by

[1] *Loc. cit.*, p. 304. *Cf.* our chapter on "Velocity of Circulation," *supra*.

[2] *Loc. cit.*, pp. 477–478.

[3] There is, of course, the further point, to be emphasized in the discussion of T, *infra*, that MV (and hence V), assuming the calculation otherwise correct, is too large, to the extent that it includes tax payments, loans and repayments, dealings between agent and principal, etc. But this criticism does not so clearly apply to MV as it does to M′V′.

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Professor Wesley C. Mitchell. He, too, concludes that V′ is, in fact, more variable than Professor Fisher would indicate.[1]

I conclude, therefore, that neither V′ nor V has been correctly calculated, for years other than 1909 and 1896. I pass now to a consideration of T, the volume of trade, after which I shall consider P, the price-level, in the equation of exchange.

Let us first recall the point made in the chapter on "The Equation of Exchange," that P and T, the price-level and the volume of trade, are not independent even in idea. If one is given an independent definition, the other cannot be given an independent definition. If the equation is to be true, then P must be weighted by the numbers of each item (as hats) exchanged. P is not a mere average, but is a *weighted* average, and T is always the denominator in the formula for P. In developing statistics for P and T, therefore, this fact must be kept in mind, and the elements entering into each must coincide, and vary together year by year.

In our chapter on "The Volume of Money and the Volume of Trade," we showed that the great bulk of trade is speculation. We showed that the *indicia* of variation which Fisher [2] and Kemmerer have constructed for trade, dominated by inflexible physical items of consumption and production, give wholly misleading results for every year except the base year. They give a steadily growing, inflexible figure, with little variation from its steady path. Trade, if chiefly speculation, is highly flexible, varies

[1] *Business Cycles*, p. 308.

[2] That volume of trade and volume of physical goods are virtually interchangeable in Fisher's thought is strikingly illustrated on p. 195 of the *Purchasing Power of Money:* "A doubling in the quantities of all commodities *sold*, or (*what is almost the same thing*) a doubling of the quantities *consumed*." Italics are mine.

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enormously from year to year, waxes and wanes. This point need not be further developed. At best Fisher's figure for trade can be accepted only for one year, 1909.

Is, however, the figure for 1909, 387 billions, an acceptable figure? Is it not decidedly too large? It is made up, it will be recalled, by taking the figures for MV and M'V', adding them together to get one side of the equation, and declaring them equal to PT. P is then declared to be $1, by the arbitrary device of taking as the unit of T one dollar's worth of every sort of good at the prices of 1909. T is, then, 387 billions, since MV plus M'V' equals 387 billions. The theory underlying this is that deposits made in banks correctly represent trade.[1] Our criticisms as to the absolute magnitude assigned to T (and hence to MV plus M'V') will rest in large measure in challenging this assumption. It is our contention [2] that deposits made in banks very greatly overcount trade.

Deposits made in banks include taxes and other public revenues; they include loans and repayments, and interest-payments; they include gifts and benevolences, money sent by parents to children away from home, pensions, payments of insurance losses, annuities, dividends on stocks, payments to and from savings and loan associations, fines, contributions to churches, and other non-commercial organizations, etc., etc. None of this represents trade.

But further, whether payments are in trade or not, many times indeed does it happen that several checks are drawn in connection with the same transaction. Professor Kem-

[1] This is strictly true only of the part of T which comes from the figure for M'V', 353 billions. In calculating MV, Professor Fisher introduces more complexities, into which we shall not enter, as the absolute amount is small—only 34 billions!—and the possible error from this source not great enough to affect a calculation where 20 billions one way or the other is within the "margin of error."

[2] *Vide Annalist*, Feb. 17, Feb. 21, March 6, March 13, and March 20, 1916, for a discussion of this point by Professor Fisher and the present writer.

merer, entertaining this possibility, thought it might be neutralized by cases where the same check passes through several hands, making payments in several different transactions. He calls this, however, a "gratuitous assumption of unverifiable accuracy," [1] and makes no claim to have given the matter careful study.

In general, I think it safe to hold that the case where a single check passes through several hands is not important.[2] It will happen chiefly with small checks in small places, or with small checks paid to laborers. It is the pecuniary magnitude of checks, rather than their number, that counts here. I am informed by several bankers that large checks are almost universally deposited at once. This is for several reasons: (1) The recipient of the check wishes to make sure that it is good. (2) It is unlikely that the check is of the right size for another transaction, unless the recipient is a mere agent for a third party, in which case he should (but commonly does not) pass it on to his principal, if double counting is to be avoided. (3) Every person who handles sums of any size wishes a record of the transaction, and his own canceled check is a receipt which he would not have if he passed on the check of another.

This last point will go far toward explaining why bank transactions may multiply without a corresponding multiplication of trade. The banks do the bookkeeping for modern business in increasing degree. Checks are records, of high legal value. A colleague recently told me that he,

[1] *Op. cit.*, pp. 112–113. It is interesting to note that Kemmerer's argument takes the form of proving, not that bank transactions do not *overcount* trade, but merely that they do not *undercount* trade. With this contention I am in hearty agreement! The overcounting is worse in Kemmerer's figures for 1896 than for Fisher's in 1909, since the 1896 figures included deposits made by one bank in another, while the 1909 figures do not. *Cf.* Kemmerer, p. 105, and Kinley, in *Report of the Comptroller* for 1896 and in the 1909 monograph, *passim*.

[2] *Vide* the present writer's discussion in the *Annalist*, March 6, 1916, p. 313.

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in his own capacity, had just drawn a check to himself, as trustee, transferring a sum from one account to another. Another colleague, with eight different bank accounts, estimates that over 50% of the deposits in three of them represent transfers from other accounts. This kind of duplication, where trust relations are involved, is enormous. Intercorporate relations and separate bank accounts within a corporation complicate it still further.

A check is drawn by a subsidiary corporation to its dividend account, and deposited; a check on this dividend account [1] is then deposited in the general account of the parent corporation; a third deposit, of the same funds, is then made in the dividend account of the parent corporation; a fourth deposit of the same funds is made in a trust fund which holds stock in the parent corporation; a fifth deposit in the personal account of the beneficiary of the trust fund; a sixth deposit may be made of a check on this fund in the personal account of the beneficiary's wife. The first three of these deposits, at least, will be made of the total dividend of the subsidiary corporation. *Not one* of these six deposits represents *trade*. Payments of wages and rents should count as trade, but payments of interest and dividends stand on a separate footing. When a man has bought a stock or a bond, he has already bought all the income which is to come from them, and to count the interest and dividends as separate items is double counting. They are *payments*, but not *trade*. Even if the dividend payment be counted as trade, however, it is counted *six* times.

There is enormous overcounting as a consequence of the combinations of corporations, each of which retains its

[1] I am informed by Mr. B. F. Smith, Treasurer of the Cambridge Trust Company, that the practice of having separate dividend accounts is a very widespread one, especially with the larger corporations.

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own numerous bank accounts. The Interstate Commerce Commission calls attention to great duplications from this cause in connection with railway income accounts.[1] Even within single corporations the duplications [2] are very great. Thus, the local agent of a railroad deposits his receipts in a local bank. His check, or, more usually, the draft of the bank, is subsequently deposited in a bank at headquarters. Subsequent disbursements, in places away from headquarters, particularly of wages, will frequently be preceded by deposits in other local banks. This duplication will be true of telegraph, telephone, insurance and other companies which have scattered agencies, including the wholesale trade. Advertising agencies will illustrate it. *All* checks between agent and principal, customer and broker, etc., will illustrate it. There is a great deal of double counting in stock transactions from this source. Thus, a Boston broker takes orders, with a check for margin, for execution in New York. The order is executed by a New York broker, who deals with another New York broker, who represents a Louisville broker, who represents a Louisville client. Now to the extent that any checks at all pass between the Boston broker and his client, the Boston broker and the New York broker, the other New York broker and

[1] *Statistics of Railways*, 1909, p. 71.

[2] Professor Fisher, in his *Annalist* article of Feb. 21, 1916, quotes Dean Kinley (*The Use of Credit Instruments*, p. 151), as holding that duplications have largely been eliminated from his 1909 figures. Professor Fisher overlooks the fact that Dean Kinley is here referring, not to money value of trade, but merely to volume of checks. Dean Kinley merely indicates that by eliminating deposits made by one bank in another, he has avoided having the same check counted in deposits made in two or more banks on the same day. Even this is not wholly avoided. (*Ibid.*, pp. 158–159.) It was extensive in the 1896 figures. Dean Kinley thinks, properly enough, that he has a sufficiently close approximation to the volume of checks, for the reporting banks, but what the checks were drawn for he does not undertake to say. His problem was *payments*, not *trade*. From the angle of volume of trade, he finds duplications even in the retail deposits (*Jour. of Polit. Econ.*, vol. 5, p. 165).

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the Louisville broker, or the Louisville broker and his client, we have overcounting. Only the check between the two New York brokers is properly counted. It is, of course, well known that a small percentage of the dealings of a customer of a brokerage house is represented by checks between broker and customer. Professor Fisher states this to be about 5%.[1] It is, however, 5% of overcounting! Moreover, through keeping "open accounts," with irregular settlements of "margins" only, the Boston broker and the New York broker reduce markedly the checks passing between them. There is a back and forth flow of items which in large degree cancel one another, since the Boston broker sells in New York as well as buys there, and the New York broker, to a less degree, both buys and sells Boston securities, through his Boston correspondent. But not all by any means is canceled, and *all* the checks that pass in this way represent double counting. The total is large.

Public funds are included in the deposits reported to Kinley. Taxes are not *trade*. Double, triple and multiple counting comes as revenues are received by local authorities, transferred to State accounts, subsequently redistributed to local accounts, or to the treasurers of State institutions, transferred from one bank to another, etc. The State of Massachusetts scatters its deposits in banks all over the State, and makes transfers from one account to another. The City of Boston has many bank accounts. The Federal Treasury deals largely with banks over the country.

Whenever a retail store has branches, duplications are likely to occur. "Chain stores" make great overcounting. "Kiting" swells bank deposits.

Replying to these contentions, Professor Fisher has urged that there is large *undercounting*, also, and that the under-

[1] *Annalist*, March 13, 1916, p. 344.

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counting balances the overcounting. I have myself called attention to a good deal of undercounting in the chapter on "Barter." A substantial amount of ordinary trade is carried on by means of partially offsetting book-credit, time bills of exchange, simple barter, etc. The amount might even run high, as compared with ordinary trade, when the clearing arrangements in the stock and produce exchanges are taken into account. But it is impossible to figure out anything at all in this line which is to be compared with the great gap between the 141 billions of trade we were able to find,[1] and the 387 billions Professor Fisher assigns to trade. The gap of over 245 billions is much too great. Besides, in our 141 billions, we have counted barter items, book-credit items, time-bill of exchange items, etc., already.

The main item of undercounting must be in connection with the clearing arrangements in the speculative exchanges. This would seem to be Professor Fisher's view, as well.[2] Data are at hand for the two great exchanges of the country which enable us to measure, with some precision, the amount of the undercounting—*i. e.*, to tell the extent to which checks are dispensed with in the trading of these two great exchanges. The two exchanges are the Chicago Board of Trade and the New York Stock Exchange.

For the New York Stock Exchange, figures are taken from Pratt's *Work of Wall Street*, 1912 ed., pp. 166–167, 180, 273. The figures are for the big year, 1901, when 266 million shares were sold, more than in 1909 by 51 millions of shares, and when the Stock Exchange Clearing House should have done better, in the magnitude of the undercounting, than it did in 1909. Figures since 1901 are,

[1] Chapter on "Volume of Money and Volume of Trade," pp. 241–248. We really did not "find" nearly that much. The figures assigned to retail and wholesale trade rest on figures for retail and wholesale bank "deposits," and are, especially the wholesale figures, much too large.

[2] *Annalist*, Feb. 21 and March 13, 1916.

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Pratt states,[1] not available. Pratt also gives figures for 1893, but does not give data as to the percentage of stocks handled by the Clearing House, so that comparison with the 1901 figures cannot be made.

In 1901, 265,944,659 shares were sold. Of these, 15% were "X-Clearing House," *i. e.*, not on the list of stocks handled through the Stock Exchange Clearing House. This 15% was paid for in full by check. The bond sales are not cleared, and so another billion dollars of checks is required for this item.[2] If we assume (on the basis of the estimates given to the writer by DeCoppet & Doremus, and Mr. Byron W. Holt, for recent years) that 25% of the 100 share sales would be added if "odd lots" were counted, we have another large item that does not go to the Clearing House. "Private clearings" reduce the number of checks in connection with odd lots, but not so effectively as is the case with hundred share sales put through the Clearing House. So far the Clearing House has done nothing. What did it do with the 85% of the stocks in hundred share lots offered for clearing?

The figures are perfectly definite. The 85% of the 266 million shares sold was 226 million shares. The "share balance" remaining after the Clearing House had done its best was 134 million shares.[3] The number of shares sold, then, for which checks did not have to pass as a result of the clearing process was 93 millions. In terms of dollars, we may put the same figures. The estimated money-value of the 266 million shares sold was 20.5 billions;[4] 85% of this is 17,425 millions. The certifications required to pay for the 134 million share balance was 10,930 millions. The saving in checks was, thus, 6,495 millions of dollars. This is the full extent to which the Stock Exchange Clearing

[1] *Loc. cit.*, p. 180.
[2] *Ibid.*, pp. 166–167; 187; 273.
[3] Pratt, *loc. cit.*, p. 166.
[4] *Ibid.*, p. 187.

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House undercounts recorded share sales. This is less than 1.7% of Professor Fisher's 387 billions! To offset this, however, we have *over*counting in the 5% of checks for all dealings on the Exchange which pass between brokers and customers, as shown, and all the checks between brokers and out-of-town brokers. We shall also find items of *over*-counting which vastly more than offset this undercounting, in *loan* transactions between brokers, and between banks and brokers, to which we shall shortly give attention.

This six and a half billions in checks saved on account of sales of stocks is no small matter, absolutely. But this, though measuring the extent of undercounted *sales*, by no means measures the services of the Clearing House to the Stock Exchange. Not merely stocks *sold* have to be cleared. Stocks *borrowed* are also cleared. Borrowing of stocks is not *trade*, but borrowing of stocks requires the passage of money and checks. When stocks are borrowed, money is *loaned*. A bear sells short. He has to deliver next day. He accomplishes this by having his broker "borrow" the stock he needs from a broker representing a bull, who is long on the stocks, and who needs money to "carry" them. The bull, who lends the stock, receives dividends from the bear, as they accrue, and pays the bear interest on the money lent. An enormous lot of this takes place. Moreover, to some extent, these transactions are increased artificially, in order that the broker may make his "clearing sheet" misleading, and avoid revealing his position with reference to the market.[1] Loans of stock and sales of stock appear alike in the transactions of the Clearing House. Moreover, apart from the necessities of the bears for stocks to deliver, we have the necessities of the

[1] Emery, *Speculation on the Stock and Produce Exchanges*, pp. 89; 74–95. A Boston broker expresses the opinion that the magnitude of artificial borrowing to make the clearance sheet misleading is not great, so far as Boston is concerned. I have got no estimates for New York.

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bulls for money to carry their stocks. If a broker who has borrowed largely from the banks finds his customers turning to the bear side of the market, he has an excess of funds. He may repay his loans, but they may be, in part, time loans, and in any case, he may find it just as well, if he can make a small fraction of 1% in interest, to lend to another broker, among whose customers the bulls are increasing. A vast deal of money is thus transferred, on collateral security, by means of "loaning stocks." Brokers prefer to borrow money from one another in this manner, since no margins are required, in general, whereas banks would require margins. These various reasons make a vast deal of "borrowing and carrying" transactions, and a regular place is set aside for them on the Floor—Post 4, commonly called the "Money Post." At this post, also, the banks, through brokers, lend on call, and the published call rates are established there. Of this, however, we shall have more to say later.

The extent to which this loaning of stocks takes place at the "Money Post," as compared with the loaning done privately, varies. It makes no difference, however, from the standpoint of the volume of these transactions that go to the Clearing House whether they are put through at the "Money Post" or outside. The loans made by the *banks* at the "Money Post" do not affect the Stock Exchange Clearing House totals.[1] Formerly the "Money Post" was a place where the position of the bears could be gauged in a given stock. If the demand for a stock was great, the bulls could take heart, and increase the pressure. To avoid giving away this information, however, borrowing is done on a large scale privately, at present.[2] Of course, if the pressure gets too strong, it will manifest itself at the money

[1] The banks, of course, are not borrowing stocks.

[2] Van Antwerp, *The Stock Exchange from Within*, New York, 1913, p. 290.

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post anyhow, since bears borrowing particular stocks will forego all or part of the interest, or even pay a premium for the stock.[1]

Now it is possible, from the figures given for the total clearings of the Stock Exchange Clearing House, in conjunction with the figures of recorded sales, and the percentage of "X-Clearing House" sales, to get a fairly accurate idea of the magnitude of these stock borrowing operations between brokers. The total number of shares offered for clearing by "both sides" in 1901 was 926,347,300! This is double the actual amount, since both buyer and seller report the same transaction to the Clearing House, the former with a "receive from" sheet, and the latter with a "deliver to" sheet. Half this amount, or 463,173,650 shares, represents the actual number of shares to be handled. As we have seen, 226 millions of this (85% of the recorded sales of 266 millions) represents sales. The rest, or 237,173,650, represents borrowing of stocks.[2] Borrowing exceeds actual sales, if the figures for 1901—a year of enormous sales

[1] It recently happened that Alaska Gold was being "loaned flat" on the Boston Stock Exchange, which was a prelude for a six point advance in the next two or three days, as the bears were driven to cover.

[2] One factor complicates this. Are all the hundred share sales recorded? In our chapter on "Volume of Money and Volume of Trade," we called attention to a statement to the effect that brokers get together before the market opens, and compare "stop loss" orders, matching these with other orders, with the understanding that they automatically go into effect if the "market" reaches the prices indicated. The statement indicated that this substantially increases sales beyond the recorded totals, as such sales do not get on the ticker. I think, however, that this cannot throw our reckoning out greatly. The great majority of sales are not on "stop loss" orders. None of the sales of "floor traders," who average a third of the total trading (*Pujo Committee Report*, Feb. 28, 1913, p. 45), would be on "stop loss" orders. The bulk of the rest is not. Moreover, not all stop loss orders, by any means, would be executed in this manner. It is not easy to see how, under the rules and practices of the Exchange, many other sales could go unrecorded, except on days of greatest stress. On September 25, 1916, when over 2,300,000 shares were sold, the daily paper spoke of sales missed by the ticker, which was swamped with sales to be recorded, as an item of some magnitude. But the Ticker is wonderfully efficient. It some-

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—are representative. We have, now, an explanation of the prevailing opinion among brokers that the Stock Exchange Clearing House dispenses with the major part of the checks that would otherwise be required. *For their purposes*, it does make a vast difference. Pratt's figures [1] show that, without the Clearing House, certifications of $27,995,896,400 would have been required; that certifications of $17,065,042,800 were obviated [2] by the Clearing House, leaving the balance of $10,930,853,600 of certifications which had to be used. This balance, as we have seen, is the major portion of what would have had to be paid anyhow for the stocks actually sold and offered for clearing. The saving on the actual sales is only 6.5 billions. But the saving to the brokers was, of course, much greater. Even six and a half billions is no slight matter for any purpose except the explanation of our 245 surplus billions! Pratt gives an estimate at another place of the certifications required by the Stock Exchange sales, reaching virtually the same conclusion that we have reached by a somewhat different combination of his figures. He indicates that 14 billions of certifications were required, counting in the bonds, in 1901.[3] This compares with the 20.5 billions estimated value of stocks sold, and approximately one billion of bonds. This leaves 7.5 billions of certifications obviated on sales. This takes no account of the "odd lots." If they run to an additional 25%, we have five

times gets behind the market by several minutes, but it rarely misses anything, under ordinary conditions.

[1] *Ibid.*, p. 166.

[2] This explains the estimates of Wall Street men that the Clearing House reduces checks by two-thirds. For *their purposes*, the saving is almost that much, of the items offered for clearings. *Cf.* Van Antwerp, *The Stock Exchange from Within*, pp. 121–122.

[3] *Ibid.*, p. 273. There is one billion difference between Pratt's estimate and mine. I incline to the view that mine is correct, the more as he puts his figure, 14 billions, as a safe lower limit. But a billion one way or the other is trifling!

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billions more which are not put through the Clearing House. My information is, however, that "private clearings" reduce the checks in connection with these, though not so efficiently as is the case with the big Clearing House.

Do the figures that get into the "all other" deposits from those connected with the Stock Exchange undercount sales made there? Not yet have we taken account of an item which swamps all that we have considered. I refer to loan transactions by the banks, particularly call loans. The volume of these is enormous. At the "Money Post" alone, the figures average between 20 millions and 25 millions a day.[1] The range is from 10 to 50 millions. The major part of these loans are not made on the Floor of the Exchange, however, but privately, between banks and brokers. Even on the Floor, no records of the loans are kept, and only estimates are available. For the loans made privately, no figures are attainable at all. The total must be enormous. One authority writes, in a letter, "The total amount of money loaned at the post varies considerably, depending upon the rate. For instance, when money is under 3%, loans are largely made directly between the banks and the brokers, but when it gets over 3% and gets strong, more loans are made at the post. Some national banks make all their loans there right along, so I understand." My information from an officer of the National City Bank is that it lends the major part of its demand money on the floor of the Exchange. The other chief lenders, according to the Pujo Report,[2] are the National Bank of Commerce, The Chase National, the Hanover National, J. P. Morgan and Co., and Kuhn-Loeb. The

[1] An official of the Bankers Trust Company has secured for me from a broker at the "Money Post" an estimate of 20 to 25 millions as an average, with 50 millions as a maximum, for 1915. The Pujo Committee, in its report in 1913, p. 34, gives a similar estimate.

[2] P. 34.

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same report states that the bulk of such loans are made directly between banks and brokers, and not at the "Money Post."

How do these transactions affect Kinley's figures for deposits, and so Fisher's total of 387 billions? The small dealer deals, usually, with one bank. When he borrows, he gets a "credit" on his deposit account, but makes no "deposit" that would get into Kinley's figures. But stock-brokers deal with many banks. They have one bank which "certifies" for them, and with which they regularly keep a "balance." But for their loans, they deal with whatever bank gives them the best rate, or has the funds to spare. In time of tight money, they shift their loans with great frequency. They borrow also from one another. "Money" is "worth money" in New York, and idle funds will be lent by whomever has them for whatever the market will pay, on collateral security on call. When a broker deposits money in his bank borrowed from another bank or another broker, he gets a deposit credit which does get into Kinley's figures—he deposits a certified check, or a bank draft. The following has been described as a typical transaction by the bond expert of a Boston banking house, and has been amplified by several Wall Street men with whom I have discussed it. A, whose home bank is Bank W, has borrowed, on call, $500,000 from Bank X. Bank X calls the loan. A finds Bank Y willing to lend him enough to pay it off. Before he can get the new loan from Bank Y, however, he must get his collateral released by Bank X. Before he can do that, he must pay off the loan at Bank X. His recourse, then, is to Bank W, his regular bank, which certifies for him, and with which he keeps his balance. Bank W gives him a certified check (either an overcertification, or a "morning loan" transaction), for $500,000, with which he pays off the loan at Bank X. He then takes the col-

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lateral from Bank X to Bank Y, and makes a new loan. He gets a draft from Bank Y, which he deposits with Bank W, and then draws another check against his deposit with Bank W to pay off the "morning loan," in case the transaction took that form. Here are three checks for this loan transaction, two of which get into clearings, and one of which gets into "all other deposits." But the checks may be multiplied. A, instead of getting a new loan at Bank Y, may call a loan from broker B, who may then call a loan from broker C, who may go to Bank Y to get the funds he needs to pay B. Here are two new checks in the series, both of which get into the "all other" deposits. Checks fly about recklessly in Wall Street, and men will turn over money many times, if an eighth of 1%, or less, can stick by the way, on a good sum, for a few days! This is strikingly illustrated by a fact which caught my attention in the monthly bank statement of a brokerage house which I was allowed to examine. The deposits made during the month, and the checks drawn during the month, balanced to within five hundred and fifty dollars out of several millions. The broker said of this: "It would be true even for a single day, and it would be true for a year. The bank requires us to keep a minimum balance; it is to our interest not to keep more than that. If we have more at the end of the day, we lend it out; if we have less, we borrow to make up the deficiency. We try to have just that balance, and no more, to our credit at the bank at the end of every day." The handling of funds by a brokerage house is a fine art, involving both technical skill and a philosophic grasp of the factors of the "money market." Are rates going up? Then it is well to reduce call loans, and borrow more on time. If lower rates are anticipated, more call money will be employed—with the possibility of a "squeeze" if too much is taken that way. Hidden dangers must be foreseen.

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The sums borrowed are enormous, and brokers' profits depend in very substantial degree on their skill in borrowing as cheaply as possible, and in utilizing their funds to the utmost.

It is here, I think, in loan transactions between banks and brokers and between brokers, that we have a major part of the explanation of the huge deposit figures for New York City, and for the tremendous influence of stock sales on clearings, which Mr. Silberling's [1] figures show. This is the opinion of Professor O. M. W. Sprague, who first called my attention to the volume of call loans, and rapid shifting of call loans, in New York, and it is the opinion of every Wall Street man with whom I have discussed the matter. The actual pecuniary magnitude of the share sales and bond sales is not enough to do it. The mass of connected loan transactions, however, substantially greater in volume than the actual sales of securities, is, with the security sales, enough to do it.

When the call rate is high, which will particularly happen when bank reserves are low, the shifting in loans will be much increased. One bank will have money to lend one day, but the next day will have to call it, to meet heavy demands at the Clearing House, while some other bank will have the surplus funds to lend. The brokers, by bidding up the rate, will tempt the temporary lending even of small surpluses, if their necessities are great. The volume of "all other deposits" and of bank clearings will be swelled by this much beyond ordinary. That this should not be revealed to ordinary statistical tests is due to the fact that speculation tends to fall off at such a time, so that the other factors in the stock exchange operations tend to reduce daily deposits and bank clearings. Mr. Silberling has applied to this problem the technique of a

[1] *Annalist*, Aug. 14, 1916.

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refinement of the correlation method, the method of partial correlation, with the result of confirming this view.[1]

I conclude, therefore, that stock exchange transactions, instead of being undercounted in bank deposits, are very greatly overcounted.[2] The big item that does it is loan transactions between brokers and brokers and between brokers and banks.

The evidence from the Chicago Board of Trade, with reference to the extent of clearings within the exchange there, comes in a letter from the Secretary of the Board of Trade to Professor Taussig. The only clearing house trans-

[1] N. J. Silberling, "The Mystery of Clearings," *Annalist*, Aug. 14, 1916, p. 223.

[2] There is one further piece of evidence which has been obtained through the courtesy of a New York brokerage house. At the request of the gentleman who has supplied the figures, I have altered them by a constant percentage, to prevent possible identification, but the proportions among them hold as they were given. The figures show the business of the house for the month of March, 1916. The figures show:

Market value of stocks and bonds bought,	1,644,630
Total deposits made during month,	1,475,502
Average borrowed from banks,	952,000

For this house, then, for this month, the deposits were less than the value of securities sold, by 11.5%. The month, however, was unusual. It was a month of reduced activity, following large activity. This is strikingly shown by the figure for the *average* bank loans for the month—over two-thirds of the *total* deposits for the month. The house had a large bull *clientèle*, which was holding its stocks, and not selling on a bear market. The turnover was very slow, as Wall Street goes. It was a time of extraordinarily easy money when banks called few if any loans. The broker, in explanation of his figures, says: "The most of our checks were to other brokers. Checks to banks about equaled checks to customers. Your assumption that we did not pay off many loans in March is, I think, right." The same broker states in another letter that he thinks that, in general, the bulk of checks to and from brokers are in dealings with banks. In this month, then, with this factor reduced to a minimum, we still have deposits undercounting sales by only 11.5%. The figures do not prove my thesis that brokers' deposits greatly overcount their sales, but they at least show that they do not greatly undercount them. In view of the peculiarities of the month chosen, with transactions between banks and brokers cut to the minimum, they are quite consistent with the contention that normally the brokers' deposits will much exceed their sales.

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actions are in connection with "futures." All "spot" transactions are paid in full by check. All futures other than those offset by clearing are paid in full by check. The total amount put through the Clearing House in 1915 was 118 millions, of which the balances paid were 41 millions (saving checks to the extent of 77 millions). This 77 millions is a trifle indeed as compared with the gap of 245 billions we are trying to fill! It is a trifle also as compared with the business done on the Board of Trade. The Secretary estimates that commodities to the value of $375,000,000 actually arrived on the exchange in 1915. On the average, the figure would be $350,000,000. For the Stock Yards "it is approximately the same—last year was $375,000,000. Of fruits, vegetables, poultry, butter, eggs, etc., sold in South Water Street, it is claimed by their statisticians, the value is $350,000,000, or a total of about eleven hundred millions *arriving* [Italics mine] yearly at this great market place, all of which is paid for by checks, and when the ownership changes, the change of ownership is always paid by check." How many times the goods change hands, cannot be stated on the basis of records of the Board of Trade. The Secretary contents himself with saying that they are "sold and resold many times." We have discussed this, on the basis of reputed figures of the Federal tax on grain futures in 1915, in our chapter on "Volume of Money and Volume of Trade." In any case, it is clear that the 77 millions of checks economized, though absolutely great, is relatively a bagatelle. It is, moreover, more than compensated for by loan transactions. The Secretary estimates that for a sixty-day period, when grain is coming in, from two to four millions will be lent by the banks daily on *arriving* grain. How great the loan transactions on subsequent sales will be we can only conjecture.

While able to find, then, important cases of trade and

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speculation which dispense with the use of checks, I cannot find anything of magnitude sufficient to aid Professor Fisher's case, and I find, on the other hand, enormous overcounting in every field where business and banks meet, as well as in the relations of banks to non-commercial depositors.

I conclude, therefore, with reference to the figures of Fisher and Kemmerer [1] for volume of trade, that they are much exaggerated for the base year, and that for every other year they are wholly wrong, both because of their excessive magnitude, and because the index of variation has been wrongly chosen.

The discussion of P, the price-level, in the statistics of Kemmerer and Fisher need not be extended. P, for the equation of exchange, and for the quantity theory, is a *weighted* average, each price that goes into it being weighted by the number of exchanges involving the commodity of which it is the price. The weighting of P should correspond to the elements in T, the volume of trade, and should vary from year to year, as the elements in T change.[2] Now Kemmerer's P is weighted as follows: wages, 3, security prices, 8, wholesale prices, 89.[3] If our conclusions with reference to the composition of the volume of trade, as developed in the chapter on "Volume of Money and Volume of Trade," are valid, this weighting gives us a P which has no relevance to the equation of exchange. The wholesale items should have a weight of not more than one-sixth of the total for 1909. Certain commodities, as wheat and

[1] Kemmerer's main figures are merely *indicia* of variation, rather than absolute magnitudes, for trade. On p. 136, *d.* (*loc. cit.*), however, he indicates that his figures for "total monetary and check circulation" is also a figure for "total business transactions"—and counts 89% of it as wholesale trade.

[2] *Cf.* the discussion of the relation of P and T in the chapter on "The Equation of Exchange."

[3] *Op. cit.*, p. 136.

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cotton, in which there is heavy speculation, should be given great weight, and securities should have, probably, the greatest weight of all. If "trade" is to be extended to cover transactions in bills of exchange and loan transactions (as it is by Kemmerer),[1] then P should contain these things, weighted more than all else put together, particularly if call loans are included. The weights should be radically altered from year to year. We should then get a P which would fit the "equation of exchange"—though what else it would be good for is hard to say! The same criticism applies to Fisher's P. It is dominated by wholesale prices.[2] It therefore has no relevance to an equation of exchange in which only one-sixth at the very most of the items are wholesale items. Neither Fisher nor Kemmerer alter their weights in P at all, to correspond to yearly alterations in the composition of T.

As *indicia* of changes in the *absolute value* of money, Kemmerer's and Fisher's index numbers, or other index numbers of numerous wholesale prices, with a substantial weighting of wages, are probably better than an index dominated by stocks. Stocks fluctuate more widely than wholesale prices and wages, their values are more affected by variations in business confidence, and by variations in the rate of interest. For measuring *the value of money*, the index numbers here criticised are very good. But for the purpose for which they are chosen, namely, to fill the equation of exchange, and to measure variations in a *price-level* of the sort the quantity theory and the equation of exchange are concerned with, they are simply irrelevant. If it were really true that such an index number varied with the quantity of money, then the quantity theory would be effectively disproved!

Now, in general summary of our criticisms of the figures

[1] *Ibid.*, pp. 70–71.

[2] *Loc. cit.*, p. 487.

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of Kemmerer and Fisher: they have systematically buried New York City, and systematically covered up speculation. All the errors converge in this direction. The *indicia* of trade cover up speculation and the other things that go on in New York, and other financial centers. The *indicia* of prices do likewise. Fisher weights New York clearings only 1, while weighting country clearings 5, in his index of variation of check transactions. He also counts New York returns for March 16, 1909, as complete, and gives all of his estimate for non-reporting banks to the country. Kemmerer does not do this, but he does exaggerate the importance of money, as compared with checks, and does not allow the velocity of money to vary at all in his figures, thus getting a much greater constancy in the figure for total circulation of money and checks than is proper, and covering up the flexibility and variability which New York gives to our system.[1] In general, our task in this chapter has been an archæological excavation—we have rediscovered a buried city.

[1] Kemmerer does not accept Kinley's estimate of 75% for checks as compared with money in payments as a "sure minimum" for 1896, but rather counts it as a "fair maximum." (*Loc. cit.*, p. 106.) Using this as a basis, he gets a monetary circulation for 1896 of 47.7 billions, and a "velocity of money" (since the monetary stock in circulation in 1896 was a little over 1 billion) of 47. (*Loc. cit.*, p. 114.) Kinley's fuller investigation in 1909 has made it clear that his 1896 conclusions understated, rather than overstated, the proportion of checks to money. His "sure minimum" was needlessly low. He concludes in 1909 that 80 to 85% for checks is safe. (*Op. cit.*, p. 201.) *Cf.* Fisher's comments, *loc. cit.*, pp. 430; 460 *et seq.* Fisher's V is about half as great as Kemmerer's, and varies to some extent. I think Fisher, since his results are closer to Kinley's later figures, has made much the better estimate here.

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PART III. THE VALUE OF MONEY

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CHAPTER XX

RECAPITULATION OF POSITIVE DOCTRINE

THE chapters which have gone before have been, in considerable degree, concerned with the analysis of unsuccessful efforts to solve the problem of the value of money, as the quantity theory, or the attempts to apply the notions of supply and demand, marginal utility, and cost of production, to the problem. Not all that has gone before has been, even in form, primarily critical. The chapter on "Economic Value" lays the foundation for the main constructive theory of the book, and in virtually every chapter some portion of our positive doctrine has been developed. In the doctrines criticised, elements of truth have been noted, and in showing the errors of the doctrines considered, constructive doctrine has been presented by way of contrast. The theories criticised, moreover, even where they have gone astray in solving problems, have at least the merit of *stating* problems, and so have aided in clearing the way for theories better based.

It is the task of the present chapter to present, in a series of theses, the main constructive results so far attained. No effort will be made to follow the order of the exposition which has preceded. A summary of that will be found in the detailed analytical table of contents. Rather, we shall seek to draw from what has preceded the positive doctrine which is scattered through the preceding chapters, and to present it by itself, as a basis for the more systematic formulation of constructive theory which the following chapters are to contain.

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1. The theory of the value of money is a special case of the general theory of value.

2. Value is a phenomenon of psychological nature. Not physical quantities, but psychological significances, are relevant when the problem of value and price causation is involved.

3. Value is not a ratio of exchange, or "purchasing power," but is an absolute quantity, prior to exchange. It is the fundamental and essential attribute or quality of wealth, the common or homogeneous element present amidst the diversities of the physical forms of wealth, by virtue of which comparisons may be instituted among different kinds of wealth, and different items of wealth may be added to make a sum, put into ratios of exchange, and so on.

4. Economic value is a *species* of the *genus*, *social value*, coördinate with legal value, and moral value. It is part of a system of social motivation and control.[1] Psychological in character, it none the less presents itself to an individual as an objective, external force, to which he must adapt himself.

5. Individual prices have two coöperating causes: (a) the social economic value of the money-unit, and (b) the social economic value of the unit of the good in question.

6. The average of prices, or the "price-level," is a mere mathematical summary of the particular prices. The causation involved in the average of prices is nothing more than the causation involved in the particular prices.

7. The value of money is to be distinguished from the "reciprocal of the price-level," or the "purchasing power of money." The value of money is an absolute quantity,

[1] Since I have already compressed the contents of a book of 200 pages into Chapter I of the present book, it seems undesirable to attempt here a further compression of that chapter. These theses, therefore, do not give the substance of the social value theory.

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one of the factors determining each particular price. Particular prices and general prices may change because of changes in the values of goods, with no change in the value of money. Or, particular prices and general prices may change because of changes in the value of money, with goods remaining constant in value.

8. The absolute value of money, assumed constant, is presupposed by the great body of present day price theory, as supply and demand, cost of production, and the capitalization theory. These theories are, therefore, inapplicable to the problem of the value of money.

9. But supply and demand, cost of production, the capitalization theory, and other laws concerned with the concatenation and interrelations of prices, being applicable to the problem of particular prices, are also applicable to the problem of general prices. (Chapter on "The Passiveness of Prices.")

10. The general price-level, as a consequence of changes in particular prices, growing out of changes in the values of goods, may rise or fall, without antecedent changes in the value of money, or the quantity of money, or the volume of credit, or the volume of trade, or in the "velocities of circulation" of money or credit. (Chapter on "The Passiveness of Prices.")

11. The general laws of prices, supply and demand, cost of production, the capitalization doctrine, the imputation doctrine, etc., conflict with the quantity theory. In the cases where they conflict, the first named doctrines are correct, and the quantity theory is wrong. (Chapter on "The Passiveness of Prices.")

12. The value of money, being a special case of economic value, is subject to the same general laws. This means, from the standpoint of my theory, that the theory of social value is applicable to the problem of the value of money.

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13. This is not the same as saying that the whole value of money is to be explained by the social value of gold bullion, conceived of as a mere commodity. A hypothetical case was constructed in the chapter on "Dodo-Bones," in which gold is the standard of value, but is not employed as a medium of exchange or in reserves, where the whole value of money is to be explained by the value of gold bullion, conceived of as a commodity.

14. But, in general, money gets part of its value from its monetary employments. (Chapter on "Dodo-Bones.")

15. The additional value which comes to gold bullion as a consequence of its employment as money, is itself to be explained on social value principles. It grows out of the social value of the services which money performs.

16. The functions of money remain to be examined in detail. And the relation between the value of particular services of money and the capital value of money, has not yet been analyzed. There is a relation between the two—a relation which varies under different conditions—even though it has been shown in the chapter on the "Capitalization Theory" that the relation is not the simple one which holds between the values of services and the capital value of ordinary income-bearers. There must be an increment to the value of gold bullion as a consequence of its being coined, however, since otherwise there would be no force leading it to be coined.

17. This increment in value to bullion, as a consequence of coinage, becomes evident when free coinage is suspended. An agio of coin over uncoined bullion may easily appear.

18. But this is not to assert the doctrine of the quantity theory. Because

19. The money service presupposes the existence of value for money from some source other than the monetary employment (chapter on "Dodo-Bones"); and

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20. Hence the monetary employment can explain only a differential portion of the value of money.

21. The proposition that money must have value from some source other than the monetary employment does not mean, necessarily, that money must be made of precious metals, or be convertible into precious metals. The value of money is, indeed, most stable and best sustained when such is the case. But it is possible for money made of paper to have value apart from the prospect of redemption—though no clear case has been made, in the writer's opinion, for the view that this has historically occurred. But as a hypothetical possibility, my theory holds that paper money may attain a value of its own, growing out of various factors which a social psychology can explain, including law, patriotism, and custom. Social values in every sphere are imperfectly rationalized. Values which in their origin are secondary and derived may become substantial and independent of their "presuppositions." This is true of legal and moral values. It is true of the capital value of land. It may be true of paper money. This matter has been discussed in the chapters on "Economic Value" and on "Dodo-Bones." The social value theory has not the limitations of the utility theory in dealing with such cases, nor is it tied to a metallist or bullionist interpretation. Legal, moral, and patriotic factors, and the influence of social custom, all fall readily into the social value doctrine.

22. The "measure of values" function, and the "standard of deferred payments" function, need not require the actual use of money, and need not add to the value of money. The function of "medium of exchange," and other functions to be analyzed in a later chapter on that topic, do involve the actual employment of money, and are sources of value for money.

23. The quantity of money and credit are matters of

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high importance in economic life. They affect vitally the smooth functioning of production and exchange. While not accepting the extreme view of those writers who see in scarcity or abundance of money the primary cause of the ebb and flow of civilization, I maintain that the quantity of money and credit does make a vast difference, and that the quantity theory contention that, after a transition is effected, the only consequence of a change in the quantity of money is a proportional change in the price-level, is wholly indefensible. (Chapter on "Volume of Money and Volume of Trade.")

24. Very much of economic theory has been developed in abstraction from money. For economic statics, with its delicate marginal adjustments, on the assumption that friction is banished, that the market is fluid, that labor and capital and goods are mobile, etc., money does appear a needless complication. But the static assumptions are only possible because money and credit have smoothed the way. It is the business, the function, of money and credit to overcome "friction," to effect "transitions," to make it possible for "normal" tendencies to manifest themselves. (Chapter on "Volume of Money and Volume of Trade.")

25. The main work of money and credit is in effecting "transitions," bringing about readjustments, enabling society, with little shock, to adapt itself to dynamic change. The great bulk of the actual exchanging that takes place is speculation, and would not occur if economic life were in static equilibrium. This is true both as a matter of theory and as a matter of statistics. More than half of the checks deposited in the United States are deposited in New York City, where "wholesale" and "retail" deposits are a small factor. Bank clearings fluctuate in close conformity with stock exchange transactions. Great banks, and the bulk of banking transactions, are everywhere found in the specu-

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lative centres. (Chapters on "Volume of Money and Volume of Trade," and "The Rediscovery of a Buried City.")

26. Hence a functional theory of money must be essentially a dynamic theory: must rest in a study of "friction," "transitions," and the like. And,

27. Hence a theory of money like the quantity theory, concerned with "long run tendencies" and "normal equilibria" and "static adjustments" touches the real problem of the value of money not at all.

28. An increase of money tends to increase trade. (Chapter on "Volume of Money and Volume of Trade.")

29. An increase of credit tends to increase trade. (Same chapter.)

30. An increase of trade tends to increase the volume of credit, and, where the money supply is flexible, tends to increase the money supply also. (Chapter on the "Volume of Trade and the Volume of Money and Credit.")

31. Production waits on trade. The problem of marketing in the modern world is often more important than the problems of production in the narrower sense. Selling costs are probably greater than strict "costs of production." "Volume of trade," far from being dependent on "physical capacities and technique," is almost indefinitely flexible, with changing tone of the market, with changing values, and with other changes, including changes in the volume of money and credit. (Chapter on "Volume of Money and Volume of Trade.")

32. The relation between the volume of money and the volume of credit is exceedingly flexible. The relation between the world's volume of credit and the world's volume of gold is likewise exceedingly loose, uncertain, and flexible. (Chapters on "Volume of Money and Volume of Credit," and "The Quantity Theory and World Prices.")

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33. "Velocity of circulation" is a blanket name for a complex and heterogenous set of activities of men. It is a passive resultant of many causes, and is itself a cause of nothing. The safest generalization possible concerning it is that it varies with the volume of trade and with prices.

34. Barter remains an important factor in modern economic life, and is a flexible substitute for the use of checks and money, increasing when the money market "tightens." It is greatly facilitated by the "common measure of values" function of money.

35. The general criticism of the mechanistic scheme of causation involved in the quantity theory has, as its positive corollary, the doctrine that psychological explanations must be given—that the phenomena are intricate and complex, as intricate and complex as the play of human ideas and emotions, and the network of social relationships.

36. This means that the theory of value, and of the value of money, as here presented, cannot assume the simple form, or the mathematical precision, which have made the quantity theory so alluring. It means, further, that the present study, as in part pioneer work, will lack finish and definiteness in many places, will contain errors and gaps, and will leave many problems unsolved, and many distinctions undrawn. At many points, the analysis is confessedly incomplete, and the problems imperfectly thought through —often inadequately *stated*, if seen at all.

In what follows, these theses, with doctrines yet to be developed, will be woven together into a systematic theory of money and credit.

The study of the functions of money, in relation to its value, will best be approached, I think, through a study of the origin of money. In this, I shall base my conclusions chiefly on the work of Karl Menger and W. W. Carlile, who seem to me to have done most in this field.

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On the basis of the general theory of value developed in the first chapter, and the results of the two chapters which are to follow on the origin and functions of money, I shall reach my main conclusions as to the laws of the value of money. On the basis of this theory of value, and of the theory of the functions of money, I shall also try to develop a psychological theory of credit, and to assimilate credit phenomena to the general phenomena of value. The development which the theory of credit has had, at the hands of men whose chief interest was that of the jurist or accountant, is valuable and important. I do not wish to discredit what has been done. Many important doctrines concerning credit have been developed. The general theory of elastic bank-credit, worked out in the controversy between the "Currency" and the "Banking" Schools, is of the highest importance. This theory I have discussed in the chapter on "The Volume of Trade and the Volume of Money and Credit." I still feel, however, that there are gaps in the prevailing ideas on credit which only a social psychology can fill. I shall undertake to construe credit as a part of the social system of motivation and control, and to differentiate it from other parts of that system by an analysis of its functions. I think, too, that the theory of the relation of credit and money is in especially unsatisfactory shape, particularly with reference to the factors governing reserves.

A final chapter, in Part IV, will undertake to bring together the various points in our discussion which deal with the theory of prosperity, and will seek to bring the notions of "theory of prosperity *vs.* theory of wealth," "statics *vs.* dynamics," "normal *vs.* transitional tendencies," and certain other similar contrasts, into a higher synthesis, which will, to be sure, not rob these contrasts of their significance, but will rather find certain generic prin-

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ciples which they share, and so make it possible to measure considerations in one sphere in terms of considerations in the other sphere. In very large degree, students of dynamics and students of statics have been talking at cross-purposes, missing the force of one another's arguments, and have been quite unable, even when understanding one another, to come to agreement, precisely because they have lacked principles by means of which they could compare in any quantitative way the forces which each studies. A higher synthesis, which would give static and dynamic theories common ground, would seem to be a desideratum of high importance. Such a synthesis would go far toward unifying the science of economics. I believe that the theory of money and credit, approached from the angle of the social value theory, will meet this need.

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CHAPTER XXI

THE ORIGIN OF MONEY, AND THE VALUE OF GOLD

THIS chapter is not concerned with history or anthropology for their own sake. The present writer has made no independent historical or anthropological researches, in connection with the question of the origin of money. The chapter is primarily concerned with giving an exposition of the theories of two writers, Karl Menger and W. W. Carlile.[1] It is not important, for my purposes, whether either writer has presented a theory which anthropology will accept as a correct account of actual origins. The theories do throw light on present functioning, and seem to me to be correct as analytical theories, whether historically adequate or not. There are two main questions with which the chapter is concerned:

(1) How did money come to be?

(2) Why should gold and silver have passed all rival commodities in the competition for employment as money?

Viewing these questions from the standpoint of present functioning, rather than from the standpoint of historical origins, we may restate them as follows:

(1) Why should men accept small disks of metal, or paper representatives of these metal disks, for which, *as* metal, they have no use, or at all events far in excess of the amount which they can make use of as metal, in return for economic commodities which they can use? The social utility of a money economy may well be granted, without giving an answer to this question. Granting that social

[1] Menger, "Geld," *Handwörterbuch der Staatswissenschaften;* Carlile, *Evolution of Modern Money.*

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economic life works better by far when men do accept these disks of metal in payments, the question still remains not merely as to why the practice started, but also as to why it continues. Granted that it is to the individual, as well as to the social advantage, that each individual should accept these metal disks in excess of his personal need for the metal, *if he is assured that he can pass them on to others at will* in return for the goods he wishes to consume, the question still remains as to why the individual should have this assurance, as to why the general practice should continue. Menger quotes Savigny as holding that the thing is downright "mysterious," and the Aristotelian answer of social convention (sometimes interpreted as "social contract") is, in effect, a confession that the thing does baffle explanation on the ordinarily understood laws of exchange. The convergence of individual and social advantage, which English economic theory has done so much to emphasize, is less clear by far in connection with money than with the case where A trades a sheep (of which he has a surplus) to B for a quantity of grain (of which B has a surplus), while A has not enough grain, and B has not enough sheep. This exchange is clearly to the advantage of both A and B, and the practice of making such exchanges is clearly to the general advantage. But in the case of money, A trades sheep (of which he may not have an excess, so far as his capacity to consume is concerned) for disks of metal which he probably does not intend to consume at all. The social advantage of a general practice of the sort is easily established, but it is not clear that it is to A's advantage, *unless we assume the practice general.* But there are many practices which could be shown to be socially advantageous if all men practiced them, and, indeed, individually advantageous, if generally practiced, which can, none the less, not be made a general practice.

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If thieves would cease stealing, we could dispense with a vast expense now incurred in police and safe deposit vaults and heavy locks, etc., and with a small fraction of the savings could give pensions to the thieves which would surpass by far their present incomes! Individual and social advantage would converge. But for many reasons the practice could not be instituted, and would break down quickly if instituted. Very powerful social pressure indeed is needed to make an advantageous social institution—like morality—work, so long as individuals sometimes find advantage in breaking the general practice, even though the general practice, *on the part of other people*, is of advantage to every individual. Now it is clear that the institution of money is to the social advantage. It is clear that it is to the advantage of every individual who has money that everyone else should be ready to accept it in unlimited amount, in return for his goods and services. But it is not clear, on the surface, why everyone should be ready to take metal disks in unlimited amount in return for goods and services. People will not take coal or horses or hay or land or white elephants in unlimited amount in return for goods and services. Why should there be such a general practice regarding metal disks or pieces of paper?

This question, to one who has always lived in a money economy, may seem childish. Such questions regarding anything to which we have grown accustomed seem childish to those who have not been used to raising them. Why does the sun rise? Why does seed-corn sprout? But these also are proper scientific questions, the answer to which is of high practical importance! The answer to the question just raised regarding money will go far toward explaining the functions of money, and the theory of the functions of money, together with the general theory of social value, will give an answer to the question as to *how the money*

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function adds to the value of money. The answer which I shall give on the first question will in large measure follow the lines laid down by Menger.

(2) The second question needs little revision, when stated from the standpoint of present functioning, rather than of historical origin. We have more recent history to deal with in connection with this question, and Carlile, in his answer, offers substantial historical and anthropological proofs. It is still, however, present functioning that is important, and the question may be restated thus:

Why are gold and silver, and particularly gold, the standard money of the great part of the world to-day? The principles of social psychology which Carlile employs in explaining the historical development, are also important in explaining the present attitude of mankind toward gold and silver, and will serve, together with the general theory of social value, to answer the question as to the value which money receives from the employment of the money metal *as a commodity.*

It is worthy of note that neither of these questions has been seriously raised or discussed by most recent writers of the quantity theory type. Professors Kemmerer [1] and Fisher give no attention to them at all. Both assume money as circulating, as the starting point of the argument, without noticing how much is involved in the assumption. Neither, moreover, gives an *analysis* of the functions of money. Considerations drawn from the question as to the origin and functions of money are hard to bring into the quantity theory scheme. If money circulates, there are causes for it. Fully to understand those causes, would be to understand also the *terms* on which money circulates, that is to say, the *prices.* But then a quantity theory would

[1] We should make a slight and unimportant qualification as to Kemmerer. *Cf.* our chapter on "Dodo-Bones," *supra.*

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be superfluous! And if the quantity theory answer should not be obviously in harmony with the answer already given by the theory of origin and functions, then doubt would be cast on the quantity theory explanation. The quantity theorists do well to avoid mixing up with their discussion considerations drawn from the general theory of value, and from the theory of the origin and functions of money.

The answer to the first question rests primarily in the fact that there are differences in the *saleability* of goods. Value and saleability are not the same thing. A copper cent has high saleability; a farm has low saleability.[1] Some valuable things cannot be exchanged at all. The Capitol at Washington cannot be exchanged, yet has value. Under a communistic or socialistic régime, exchange, as we now know it, would largely or wholly cease. An entailed estate cannot be sold, yet has value. If society should really come to the stable equilibrium of the "static state," most of the exchanges of lands,[2] securities, and other long-time income-bearers would cease, but they would still be valuable. I have developed these notions in my article on

[1] It seems necessary to point out this essential lack of correlation between value and exchangeability, since Mr. Horace White, in his *Money and Banking* (5th ed., p. 135), identifies value and exchangeability: "Value is an ideal thing in the same sense that weight is. The former means exchangeability; the latter means force of gravity. A dollar is a definite amount of exchangeability." *Cf.* also Amasa Walker's contention that "exchangeable value" is tautology, equivalent to "exchangeable exchangeability!" *Science of Wealth*, 5th ed., p. 9. *Cf.* my article "The Concept of Value Further Considered," *Quart. Jour. of Econ.*, Aug. 1915, pp. 696 *et seq.*

[2] This is stated by Schumpeter, so far as land is concerned. *Vide Quarterly Journal of Economics*, Aug. 1915, p. 704. It is due Menger to point out that he does not make the distinction between value and exchangeability which I have just made. His theory rests in an analysis of the saleability or exchangeability of goods. But Menger's conception of value is essentially different from my own. He commonly means by "*Wert*" merely subjective value, or marginal utility. He objects to the notion that one good measures the value of another, or that goods, when exchanged, are equivalent in value, on the ground that there must be a surplus in value (subjective value) for each exchanger, or exchange would not take place. He has, as a primary concept, no

"Value" in the *Quarterly Journal of Economics*, Aug. 1915, and have referred to them again in the chapter on "Value" in the present book, and so need not expand the discussion here. Exchangeability and value are different characteristics of goods. Value is an essential precondition of exchangeability, but can exist without it. Value is, however, commonly increased by exchangeability. But the theory of exchangeability is a separate matter, and cannot be deduced from the theory of value alone.

Menger points out the difference between "buying price" and "selling price." You can buy a piano for $400. If you try the next minute to sell it for $375 you will probably fail. You may pay ten thousand dollars for a farm. The income of the farm may increase. The tax assessment may increase. The capital value of the farm may increase. And yet, you may have to wait for a long time before you find a buyer who will pay you ten thousand dollars for it. One buys pianos or farms, as a rule, only when one wishes to use them, or when one has such special knowledge of the market that one knows pretty definitely where purchasers can be found for a resale, at a profit. Even in such highly organized markets as the stock and produce exchanges, one cannot usually buy in quantity and sell immediately without some loss. "Buying price" and "selling price" of such a stock as Industrial Alcohol Preferred are sometimes five

absolute social value. "*Tauschwert*" is for him a relative value, though he is finally driven to constructing what is virtually an absolute value notion, by distinguishing "*äusserer Tauschwert*" from "*innerer Tauschwert*" in the case of money, the latter being concerned exclusively with the causes affecting prices *from the side* of money, ignoring changes in prices due to causes affecting goods. (*Cf.* art. "Geld," in *Handwörterbuch der Staatswissenschaften*, 3d ed., pp. 592–593. He does not make this distinction in developing the theory of saleability of goods, however. *Cf.* the chapter, *supra*, on "Marginal Utility and the Value of Money." It is absolute social value which I am here distinguishing from exchangeability. It is equally true, however, that subjective value and exchangeability have no necessary correlation.

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points apart, at a given time. The forced sale of land in bankruptcies, or for taxes, notoriously often bring prices far below the price which would correctly express the value of the land. It is only in the ideal fluid market assumed by static theory, where adjustments are instantaneous, where causal-temporal relations have become timeless logical relations, that values are perfectly expressed in prices.[1]

All these difficulties were enormously greater in days of primitive barter, before money and organized markets had been evolved. The difficulties of barter have been much elaborated in the literature of money. I shall recur to the topic in my chapter on the "Functions of Money." Part of the trouble arises from the "want of coincidence" in barter—the failure to find the man who has what you want, and who at the same time wants what you have. Goods have high or low saleability, depending, in considerable degree, on the *universality* of the desire for them. They may have high *value* if only a few rich men desire them, provided they be scarce. The paintings of old masters would be a case in point. Incidentally, the difference between buying price and selling price is often enormous in this case, and the making of a sale may well involve long and expensive negotiations. The difficulties of exchange here arise not alone from the limited market, however, but also from the fact that each painting is a unique, and a unique of high value. A good might have high saleability despite the fact that the ultimate demand for it comes from only a few rich men, if it could be easily subdivided and standardized.

Menger enumerates a number of circumstances connected with a good which increase its saleability. Among them are the following:

1. Widespread and intense desire for the thing (to which

[1] *Cf.* A. S. Johnson, "Davenport's Competitive Economics," *Quart. Jour. of Econ.*, May, 1914, p. 431.

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should be added, adequate wealth on the part of those who desire it).

2. Scarcity of the commodity in question.

3. Divisibility of the commodity.

4. Considerable development of the market.

5. That the demand for the article should be more than local.

6. That it be cheaply transportable.

7. That commerce between localities in the article be unrestricted.

8. That demand for the article be constant, not fluctuating, in time.

9. That the article be durable.

10. That it be uniform in quality, so that standardization is easy.

In general, Menger's list meets the requirements often laid down for a good *medium of exchange*. In general, to the extent that any commodity meets these tests, it will be *saleable*. Commodities will vary indefinitely in the extent of their saleability.

Starting with the distinction between value and saleability, and with the analysis of the circumstances affecting saleability, we may now undertake to see how money tends to develop out of a barter economy. Suppose that a man, in a barter economy, has a good of low saleability, which he wishes to trade for some other specified commodity. He finds no one who possesses the commodity he wants who is willing to trade with him. But if he can trade his article of low saleability for some other commodity of higher saleability, *still not the thing he wants*, he has yet made progress, he has got *one step nearer* the object which he does want. It will be possible now, perhaps, to trade the new article, of higher saleability, for the commodity he wants. If not, he can trade it for some article of still higher

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saleability, which he can finally trade for the article he wants. By several indirect exchanges, he finally reaches his object. Incidentally, it is erroneous to distinguish money and barter economies as economies based on direct and indirect exchange. The barter economy may well involve much more indirection than the money economy, in many cases.

If there be in the market some one commodity which has a conspicuously higher degree of saleability than any other, the more sagacious men in the market will make it a point to get hold of it and accumulate it in excess of their anticipated consumption of it. They will do this, because they will see that they can thereby get other things which they do need more easily than in other ways. With the accumulation of a given kind of highly saleable goods, in excess, by a few men in the group, in the expectation that the surplus will subsequently be used to buy other goods,—as yet perhaps not specifically determined—we have, not money, but a big step toward money. At first only a few grasp the great idea. They succeed and become wealthy. Then others see the advantage of the thing, and imitate them. The prestige of the wealthy and successful men would induce imitation even if the advantage were not clearly seen. Then a tradition and a custom grows up. With the growth of tradition and custom, picking out one or a small number of things as particularly desirable objects to accumulate because of their saleability, with the practice of accumulating these articles in excess of intended consumption, money becomes an accomplished fact. There is no need for agreement or legislation. Money is not, in its origin, certainly, a matter of law or conscious public planning.

With the development of a highly saleable article into money, moreover, we have further a great increase in that

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saleability itself. The quality which made the practice possible becomes greatly enhanced by the practice. Menger thinks that this leads to an absolute difference between money and goods, the money article, which formerly was merely superior to other goods in saleability, now becomes absolutely saleable. The absoluteness of this distinction, which would make it a distinction in kind, rather than in degree, seems to me not to be sound. I think that the distinction remains a distinction of degree. For one thing, the development of money, while it adds to the saleability of the money-commodity, *also adds to the saleability of other goods*. *Two* things must be exchanged, in order that *one* may be! It is the business of money to facilitate exchange, to overcome the difficulties of barter, to bring about the fluid market. And it does this not merely by acting as a medium of exchange. The fact that goods can be *priced* in terms of money, can have a common measure of value, makes barter itself easier, as I have shown in my chapter on "Barter" in Part II. There are many articles in trade at the present time whose saleability is not much less than that of money, in ordinary times. Wheat in the grain pit is surely highly saleable. Stocks and bonds are. If it be objected that in the wheat market there is always some difference between buying price and selling price, if considerable quantities are involved, it may be answered that the same is true in the "money market." The man who has just negotiated a three months' loan of five hundred thousand dollars at 3½% may well have trouble in turning that loan over to someone else immediately without shaving ¼% from the money-rate! Besides, it is not true that values remain unchanged when a big buyer shifts from the bull to the bear side of the market. Buying price is higher than selling price in that case partly because *his economic power* has ceased to sustain the value of the

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wheat, and the price would not correctly express the value if it remained uninfluenced by that fact.

Further, as we shall see when we come to the analysis of credit, one chief function of modern credit is to increase the *saleability of goods*, and to enable men to use the value of their goods in effecting exchanges without actually alienating their property in the goods. It seems to me that the drift of modern systems of exchange is toward closing up the gap between money and goods, in respect of saleability, rather than to widen it.[1] But this is to anticipate later discussion.

It is not necessary, in answering our second question, as to the reasons why gold and silver have become the standard money of the world, to go far in the study of primitive moneys. Wheat has almost never been money. The value of wheat sinks rapidly with increase in supply, and is very unstable. Wheat meets some other tests that fit it for money, as easy divisibility, ease in standardization, and even has some degree of durability, though subject to deterioration and waste with keeping, and involving expense in keeping. Carlile and Ridgeway think that wheat was used to some extent among the Greeks in Southern Italy as money, at one time.[2] But this was possible because there was a regular export trade in wheat—the same thing that made tobacco available as money in Virginia. In general, however, commodities which minister to easily satiable wants are ill-adapted for money. And that is especially true of current stocks of goods currently consumed.

[1] The man who wishes to "break" a twenty dollar bill may well have to go through Menger's process, getting two tens from one man, breaking one of these into two fives with another, and so on. Or he may have to buy something which he does not want to get "change."

[2] Ridgeway, *Origin of Metallic Currency*, p. 327; Carlile, *Evolution of Modern Money*, p. 233. Grain is said to have been used in ancient China as money,—not as a standard of value, but as a medium of exchange. Chen Huan Chang, *Economic Principles of Confucius and his School*, vol. II, p. 437.

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The accumulation of money, moreover, implies a stage of human development where the accumulation of *capital* is possible. It implies foresight, the suppression of present wants in the interest of future wants, and almost always money has been a commodity well suited to serve as provision against future contingencies. Cattle, slaves, knives, fish-hooks, cooking implements, and similar things have been money. The "store of value" function manifests itself early.

But very early a different sort of commodity comes in. Articles of *ornament* early begin to take the place of articles that minister to more animal wants. It seems strange that articles meeting wants which are commonly counted frivolous and fanciful should distance those obviously necessary in the race for a place as money. It seems strange that the nations now at war should seem more concerned about their gold supplies than about their wheat supplies.[1] But it is none the less a fact that men in all ages have been enormously concerned about ornament. In warm regions, ornament has commonly preceded clothing. Very early, necklaces, bracelets, rings, earrings, nose-pendants, etc., became objects of exceedingly great desire. And very early, gold and silver were used for such purposes, and men made long expeditions for them and fought wars for them in very early times, before the money economy was developed far. Other ornaments than those made of gold and silver have also become money. Wampum, polished shells, iron ornaments, etc., have all been money. The Karoks of California were accustomed to use strings of shell ornaments as money. When this was supplanted by American silver, they used strings of silver coins as ornaments, dressing their women lavishly with rows of silver dimes, quarters, and half-dollars! Ornament and money are freely *inter*changeable in primitive life. To-day, in the Western world, the thing is

[1] Written in 1914.

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more specialized and differentiated, and the interchange of money and ornament is largely confined to jewelers, bankers, especially international bankers, gold brokers, and the mints, *through* whom the rest of society make the interchange. In India, however, the peasant's hoard takes the form of bracelets, bangles, and earrings for his wife and daughters, and the peasant himself seems to regard them in the double light of provision for future needs, and as conferring social distinction. They are both ornament and savings bank, and are superior to a savings bank from the standpoint of effective saving, since the natives would spend what they put in the bank, but only famine can make them dispose of the ornaments of their women.[1] Saving is a practice not easily started. There are powerful motives in human life making for prodigality. Social prestige comes to the man whose hospitality is lavish. Social expectation, which is the most powerful steady motive power in human life, makes powerfully for prodigality. Thrift is a virtue little esteemed among primitive men, and none too highly esteemed among the masses in most countries. The grudging person, the tightwad, the man who fails to do his share of the treating, the woman who entertains her guests with inadequate fare—none of these enjoy high social esteem. To offset this, a motive equally powerful must manifest itself. It would be considered mean and contemptible for the Hindu to put money away instead of spending it on feasts at marriages and funerals, and in hospitality on other festive occasions. But he gains, instead of losing, in social esteem and prestige, if he decorates his women with gold and silver. Later, the advantage of such a practice as a

[1] The Hindu law of inheritance is a factor here. The Hindu woman may retain, after the death of her husband, father or brother, the ornaments he has given her during his lifetime. But all of the rest of the family property must go to male heirs, even remote male heirs coming in before the closest female relatives.

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matter of provision against future wants would get into men's minds, and would become an added incentive to maintain and increase the practice. Thus the frivolous and fanciful side of men's nature furnishes a powerful lever for the development of both money and capital. In the store of value function we find one of the earliest and most significant functions of money. Carlile offers a wealth of evidence to show this interchangeability of money and ornament among many peoples, at different stages of culture.

Three powerful elements of human nature work together in sustaining the value of the metals which become widely used as ornament:

(1) love of approbation;
(2) the sex impulse;
(3) the spirit of rivalry, or competition.

In these three we have, perhaps, the firmest basis which it is possible to construct for the value of anything! When religion is added, as has often been the case with the precious metals, the basis becomes solid indeed! Modern social psychology has increasingly made clear the power of the first. Social expectation can take the raw stuff of human nature, and mold it into almost any form it pleases. Original, hereditary differences remain. Some raw stuff is so inferior that no high social organization can be built out of it. Some stuff cannot respond very effectively to the social stimuli. But *qualitatively*, the tendency is for men to become what society expects. Individuals succeed more or less in meeting social expectation. But the very elements of individual aspiration and ambition, the very self of the individual, are molded to the social pattern, and, with the same racial stock, vary almost indefinitely from time to time and from place to place, with the *mores*. If ornament confers distinction,—and almost everywhere it does—men will seek to possess ornaments.

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Commonly it is for the sake of the other sex that men seek ornaments. Ornaments are an aid in wooing! Men gain wives by being able to give them ornaments.—Not that this is the whole story!—And social expectation, almost everywhere, requires that men decorate the wives that they have won. Wives usually reinforce social expectation in this matter.

Further, the desire for ornament is competitive. One's women must be *better* ornamented than the women of one's neighbors, if *distinction* is to be gained thereby. But this sets a faster pace for the neighbors, and the standard of social expectation is raised as to the necessary amount of ornament. It is the same sort of competition that arises among armed nations. A new battle-ship for one requires that all increase their naval strength. New armies in Germany call for new armies in France. A vicious circle is created. The desire for ornament, unlike the desire for food, becomes insatiable. And hence, the value-curve for the metal used as ornament sinks very slowly, being reduced, not by satiation of want, but by limitation of economic resources. I need not elaborate these notions further. They are of the same sort that Veblen has developed in his *Theory of the Leisure Class*. They rest on fundamentals in human nature, however much they differ from the psychology of the "economic man." They give assurance, I think, that, unless radical change in tastes and fashions come in, which displace gold and silver from their position as ornaments and as means of display, we may expect the value of gold to maintain itself at a high level regardless of great increase in quantity. I do not share the view which Carlile himself seems, at times, to express [1]

[1] *Cf.* Carlile, *Monetary Economics*, introductory chapter. The whole question may hinge on terminology, so far as Carlile is concerned. It is not clear what he means by "value of gold."

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that gold does not sink in value with the increase in quantity. It seems to me easily demonstrable that it has sunk, and does sink. But I should expect the value of gold to survive the shock that might come if gold were entirely displaced from monetary use vastly better than any commodity which serves wants of a different character could stand a similar shock. The demonetization of silver has, of course, not entirely displaced silver from the monetary employment. It has, however, made it necessary for the arts to absorb a greatly increased proportion of the new silver,[1] and not a little of the old silver. The demonetization of silver, moreover, was accompanied and followed by a great increase in silver production. But silver has stood the shock amazingly well.[2]

[1] *Cf.* Conant, *Principles of Money and Banking*, I, ch. 7, esp. p. 102.

[2] I do not believe that we have sufficient agreement among the best students of the statistics of the precious metals to justify any statistical conclusions regarding the laws governing the industrial consumption of gold and silver. Even the facts as to the proportions of annual production of gold in recent years going to money and to the arts are in dispute. Thus, DeLaunay (*The World's Gold*, New York, 1908, p. 176), divides the annual output as follows: Exportation to the East, and loss, 16%; coinage, 44%; industry, 40%. The industrial employments are divided as follows: jewelry, 24% (of total annual gold production); watch cases, 10%; gold leaf, 2.25%; watch chains, 1.75%; plate, 0.75%; various uses, as pens, dentistry, chemical works, etc., 1.25%. DeLaunay's competence as an authority is attested by various writers, among them W. C. Mitchell (*Business Cycles*, p. 281). Mitchell, comparing DeLaunay's estimates with divergent estimates of other authorities, concludes that there is not sufficient evidence to justify definite conclusions. I do not think that anyone who has read the criticisms which Touzet has brought together (*Emplois Industriels des Métaux Précieux*, Paris, 1911, pp. 49–52) of the methods employed in the investigations by the Director of the United States Mint in 1879, 1881, 1884, 1886, and 1900, will have large confidence in the exactness of the results reached in those investigations. (See annual reports of the Director of the Mint for the years in question.) Touzet's careful and elaborate study employs the figures of these investigations as the best available, but with substantial misgivings. There are many indeterminate elements in the problem, as shown by both Touzet and DeLaunay, among them, the extent to which coin is melted down for industrial purposes.

The Director of the Mint would assign a much higher proportion of the annual output to coinage than would DeLaunay.

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It is, of course, thinkable that the attitude of mankind, under new social conditions, and with new tastes and fashions, may change, with reference to gold and silver. Love of approbation and distinction, the sex impulse, and the spirit of rivalry, are eternal elements in human nature. But their manifestations may change. There have been times when love of distinction gratified itself in poverty and filth and asceticism. Almost anything may be exalted into a social ideal. Society may even reach ideals of such a sort that a man may gain social approval and the love of woman in high competition with his fellows in the service of mankind! But even here gold and silver may have a place. They are beautiful, as we now see beauty, and beauty itself is good! The world is better if it has beauty in it.

It is just as well to conclude at this point what I shall have to say regarding the value of gold as a commodity.[1] The same quantity of gold and silver may have widely varying values, depending on the distribution of wealth and power. It is not alone intensity of individual desire that controls values, but also the social weight of those who manifest the desire. And this depends on the legal and other institutional values concerned with social organiza-

Earlier studies, by Soetbeer and Suess, seem quite out of harmony with these conclusions. (Suess, Eduard, *The Future of Silver*, Washington, Government Printing Office, 1893, pp. 51–53.) Suess thinks that virtually as much gold was going into the arts uses as was being produced, in 1892, and quotes Soetbeer (*Litteraturnachweis*, p. 285) as admitting that such a contention may not be demonstrable, but at the same time holding that it cannot be disproved.

In the face of what seems to be a really indeterminate statistical problem, I content myself with the theoretical conclusions in the text. Because I cannot find adequate grounds for confidence in the main source from which he has drawn his statistics, I refrain from a criticism of the theory and method underlying Professor J. M. Clark's ingenious effort to derive statistical laws for the elasticity of the arts demand for gold. (*American Economic Review*, Sept. 1913.)

[1] *Cf.* our chapter on "Economic Value," *supra*, and "Social Value," *passim*.

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tion. The point is strikingly illustrated by Walker's [1] account—designed for another purpose—of the effect on the values of gold and silver of the conquests of the great Eastern empires by Alexander the Great and the Romans. The production of gold and silver, for the great Eastern empires, was like the rearing of the pyramids in Egypt. All power was centered in the hands of a few despots. Control of vast masses of laborers was in their hands. The social values—it is difficult to classify them as legal, economic and religious, since all three are blended—gave little weight indeed to the desires of the masses, and tremendous weight to the slightest whims of the despot. Thus, since the love of gold and silver was intense in these despots, and since religious considerations also called for the accumulation of great treasuries of gold and silver, enormous numbers of laborers, living miserably, toiled in the mines to produce them, and amazing stores of gold and silver were accumulated. The precious metals had, in these Eastern empires, a high value per unit, since so large a portion of the social energy of motivation attached itself to them. With the conquests by Greeks and Romans, however, a great change came. The old, gold-loving despots lost their power. The conquerors had vastly less love for gold and silver for their own sake. Moreover, the leaders among the conquerors had very much less power in their own social systems than had the oriental despots. Their soldiers were in considerable degree free mercenaries, who had a right to a share in the spoils, and who cared much less for hoards of precious metals than for many other things. In the new régime, the social centre of gravity was changed. There remained few who loved great stores of precious metals who had power enough to accumulate them. Mining on the old basis was impossible. Though slavery per-

[1] F. A. Walker, *International Bimetallism.*

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sisted, more and more of the labor of slaves went into the production of things that the masses of men could consume. Gold and silver sank enormously in value.

Radical readjustments in the distribution of wealth in our own day, might well make substantial changes in the value of gold, without any change in its quantity. That a more equal distribution of wealth and power, however, would lower the value of gold now, as in the case just discussed, is not so clear. The masses in the Western countries are already fed and clothed, as a rule, even in times of adversity, and usually increasing income for them means increasing expenditure to satisfy less pressing wants, and particularly to satisfy wants connected with social esteem. The laborer's wife gets an expensive cab for her baby when she can afford it. The negroes have gold fillings put in their front teeth—sometimes when the teeth are sound! The practice of giving wedding rings, and even engagement rings, is spreading among the poor. Our American rural poor, of pioneer stock, have had less concern for gold and silver ornament than the masses of the Asiatics and recent European immigrants. But among the rural poor in America, as city standards spread, the tendency to use gold and silver ornaments seems to be increasing, while we may with considerable confidence expect, I think, that the rise of the immigrant to better economic conditions will mean a larger use of gold and silver on his part. Gold leaf on ceilings and radiators would cease, doubtless, except for public buildings, if great fortunes disappeared, and the use of gold, at least, for plate, would be impossible in an economic democracy.[1] Silver might well gain in value at the expense of gold if there were radical changes in the distribu-

[1] See DeLaunay, *The World's Gold*, New York, 1908, p. 176. DeLaunay's figures indicate that the use of gold for gold leaf and plate is quantitatively a minor factor in the industrial consumption of gold. Jewelry and watch cases are the most important items.

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tion of wealth. It is notorious that prosperity among the agricultural masses of India is promptly followed by absorption of gold in that country. I venture no concrete conclusions on this point, beyond the general conclusion that a redistribution of wealth, with no change in the quantity of gold, might well be expected to alter the value of gold.

It may be added that the general impoverishment of Europe, growing out of the present World War, will probably lower the marginal value of gold in the arts (and hence as money) in considerable degree. From this cause alone, to say nothing of causes growing out of the money-employment of gold, and growing out of the values of goods other than gold, we might expect higher prices after the War than before the War, for articles of consumption.[1]

[1] Capital prices of lands and securities might well be lower, if interest rates are markedly higher, and if land rents and "quasi-rents" suffer from higher wages and higher interest.

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CHAPTER XXII

THE FUNCTIONS OF MONEY AND THE VALUE OF MONEY

In preceding chapters, I have spoken of the "money-service" as a source of additional value of money, under certain conditions. Before money can function as money at all, it must have value from some non-monetary source.[1] But, given this prior value, money performs valuable services. These valuable services, in certain cases, add to the value of money. Moreover, the fact that money, when made of a metal used in the arts, lessens the amount available for use in the arts, raises the marginal value of that metal there, and consequently raises its value in monetary form as well. It is now necessary to analyze the money-service, and to see in precisely what ways it does affect the value of money. And first, we must notice that the money-service is not simple, but compound; that in fact there are several services of money, in many ways distinct from one another; that not all money can perform all of these services; that most of them may be performed by things other than money, that these services are not all equally important as sources of the value of money, and that the same service varies, from time to time and from place to place, in its significance from this angle; and finally, that one of these services which is of the greatest social importance, namely, the "common measure of values" function, does not add to the value of money at all.

I shall not now undertake a history of theories of the

[1] *Cf.* chapter on "Dodo-Bones," *supra.*

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functions of money. Many of the points which follow are common property of many writers.[1] The nature of some functions has been more clearly explained than that of others. I have not found in the literature of the subject any very clear statements, moreover, as to the relations of different functions to the value of money. I shall try in what follows, by a series of hypothetical cases, to isolate each function of money, as far as may be, and shall try, by varying my hypotheses, to indicate variations in the influence of the different functions on the value of money.

The functions of money have been variously described and named. The following list seems most satisfactory to me:

1. Common measure of values (standard of value).
2. Medium of exchange.
3. Legal tender for debts (*Zahlungs-* or *Solutions-mittel*).
4. Standard of deferred payments.
5. Reserve for credit instruments, including reserve for government paper money.
6. Store of value.
7. Bearer of options.

The common measure of value function rests in the intellectual needs of man. It grows out of the necessity for calculation, for bookkeeping, for understanding what is going on. *Any* object of value may be used to measure

[1] Among the writers who have treated this topic, I would mention especially Menger, "Geld," in *Handwörterbuch der Staatswissenschaften;* Laughlin, *Principles of Money;* Scott, W. A., *Money and Banking;* Knies, *Das Geld;* Walker, F. A., *Money* and *Political Economy;* Conant, *Principles of Money and Banking;* Seligman, *Principles of Economics;* Johnson, J. F., *Money and Currency;* von Mises, L., *Theorie des Geldes und der Umlaufsmittel;* Helfferich, K., *Das Geld;* Simmel, *Philosophie des Geldes;* Davenport, H. J., *Economics of Enterprise.* The difference between the standard of value (common measure of values) function, and the medium of exchange function is particularly well illustrated by Scott, *loc. cit.*, ch. 1. The legal functions of money are especially treated by Knapp, *Staatliche Theorie des Geldes.*

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the value of anything else, just as any object of weight—say an irregular mass of iron—may be put in the balance against some other object, and the relation between the absolute weights of the two objects thus more or less definitely ascertained.[1] But it helps little, in getting at the aggregate weight of a collection of objects, to know that A among them is heavier than B, while D is lighter than F. To get a knowledge of the situation adequate for quantitative manipulation, it is best to compare all of the objects with some *one* object, chosen as the standard of weight, or common measure of weights. Thought is thus immensely simplified. If we may imagine the calculations of a dealer in a rural region, where no common measure of values is used, it will help to make clear the nature of this function. Let us suppose that he deals in nails, wire, cotton cloth, eggs, butter, hams, sugar, and moonshine whiskey, and that his customers also make and use most of these things, using him as a central clearing house in their rude division of labor. Without a common measure of values, it is necessary for him to keep in mind the price of every commodity in terms of every other commodity. If there are twelve commodities, this means 66 ratios which he must remember, according to the formula for permutations and combinations. In general, in such a situation, there would be the following ratios: $(n-1) + (n-2) + (n-3) + \ldots (n-(n-1))$. Let him choose, however, one of his commod-

[1] For discussions of the idea of measuring values, and the dependence of this on the conception of value as an absolute quantity, a common or generic quality of wealth, see Knies, *Das Geld*, I, 113ff.; Kinley, *Money*, 61–62; Merriam, L. S., "Money as a Measure of Value," *Annals of the American Academy*, vol. IV; Carver, "The Concept of an Economic Quantity," *Quart. Jour. of Econ.*, 1907; Laughlin, *Principles of Money*, 1903, pp. 14–16; Davenport, *Value and Distribution*, p. 181, n.; Anderson, *Social Value*, chs. 2 and 11, and "The Concept of Value Further Considered," *Quart. Journal of Econ.*, 1915; Helfferich, *Das Geld*, 1903 ed., pp. 470–478; Scott, *Money and Banking*, ch. 1.

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ities, say eggs, as the common measure of values, and he needs to bear in mind only eleven prices, namely, the prices of each of the other eleven articles in eggs. Thinking is immensely simplified. In general, with a common measure of values, dealers need bear in mind only (n–1) prices. Suppose that at the end of the day, after considerable trading, our dealer finds the following changes in his stock:

He has gained	*He has lost*
8 doz. eggs	12 lbs. nails
3 gallons whiskey	8 lbs. wire
4 hams	13 lbs. butter
5 yards cloth	10 lbs. sugar

Has his trading been profitable? How can he tell? Reduce all the items in both columns to their equivalents in eggs, however, and the answer is very easy. No complicated business is possible without this common measure, and common language, of values.

Be it noted that this common measure of values does not necessarily involve the use of a medium of exchange. The practice of *thinking* in a common measure is what is involved. If the article chosen be eggs, which all are accustomed to use, the service of a common measure might easily be performed without the practice of indirect exchange, assuming that other physical difficulties of barter to which I shall shortly refer, were absent. Indeed, as I have pointed out in the chapter on "Barter" in Part II, a great deal of barter goes on in modern life, made very much easier by the fact that we have a common language of values, a common measure of values. For the easy working of the system, it is important that the common measure of value be an article with whose value the group is well acquainted. The frequent testing of this value in actual exchanges vastly facilitates this. But actual ex-

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change is not necessary for the performance of the measure of value function. We have cases where the measure of values and the medium of exchange are different. Thus, in the Homeric poems, we find indications that cattle served as a measure of values, even though payments were made in gold. The Virginians commonly *thought* in pounds, shillings and pence, even when using tobacco as a medium of exchange. The need for a common measure of values would manifest itself in any complex socialistic society, even though exchange were largely dispensed with. No systematic plans for utilizing the resources of such a society would be possible, no bookkeeping would be possible, without some such device.

For this function, I prefer the term, "common measure of values," to the term often used instead, "standard of values." The latter term, as used in connection with the expression "standard money," sometimes carries the connotation of "money of ultimate redemption," and its main function is thought of as serving in reserves. The reserve function is a separate function, however. It is common to have money made of the standard metal in reserves. But this need not be the case. I would refer once more to the hypothetical illustration developed in the chapter on "Dodo-Bones": gold, not coined, as the "standard of value"; paper as the medium of exchange; silver bullion, at the market ratio with gold, as the reserve for redemption of the paper. This may suggest that a distinction may properly be drawn between measure of values, and ultimate standard money. The paper money, in this case, would be the thing of which the masses would ordinarily *think*, so long as the system worked smoothly. And the paper could serve as a measure of values. The case is not unlike the case where a "standard yard," or "standard pound" is kept for ultimate reference in a government bureau,

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while yardsticks or pound weights in the shops and warehouses do the actual measuring. The cases do not, indeed, run on all fours. The measurement of weights and lengths involves physical manipulation; the measurement of values is an intellectual operation, made by comparing two objects of value. The comparison may be made in actual exchanges; it may be made by an accountant's estimate; it may be made by comparing the results of several exchanges, in sorites form, only one of which involves the ultimate standard measure. The yardsticks actually used may vary more or less, by accident or design, by variations of temperature, etc., from the standard yard. The paper dollars, under a smooth working of the system described, would be held closely to the ultimate standard, and would, in any case, not vary as compared with one another at the same time and place.

When the medium of exchange diverges in value from the ultimate standard, as in the case of the American Greenbacks during the period from 1862 to 1879, we have, sometimes, shifting relations among the functions. The Greenbacks were the measure of value most commonly in use. They were legal tender for debts, except where gold was specified in the contract. They were commonly the standard of deferred payments. To a considerable extent, however, gold was used in reserves, and even as a medium of exchange. People *thought* in both standards. And finally, gold remained an ultimate standard to which the Greenbacks were referred, and by which variations in their value were measured. The terms, "primary standard" (gold) and "secondary standard" (Greenbacks), have been employed to aid in straightening out this confusion.[1] I think, on the whole, that the term, "common measure of values" describes the function which I wish to emphasize more

[1] See Scott, *Money and Banking*, ch. 3.

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clearly than the term, standard of values, and I shall, in general, employ it for that purpose.[1]

The medium of exchange function grows out of the physical difficulties of barter, rather than out of intellectual needs. The discussion in the preceding chapter of the origin of money has emphasized the nature of the difficulties which a medium of exchange meets. A has an ox, which he wishes to trade for shoes, sugar, and a coat. Neither shoe-maker, tailor nor grocer cares to take the ox, however, and, besides, no one of them could supply A with all three of the things he wishes to get. Moreover, even if A should meet a man who had all three things, he would not care to give up the ox for them, since the ox is worth more than all three. If there be a medium of exchange, however, A may sell his ox to the butcher, and take his pay in that medium, which will be something easily and minutely divisible, buy coat and sugar and shoes, and take the surplus of his medium of exchange home, waiting for another occasion. The medium of exchange function overcomes the difficulties arising from low saleability of many goods, due to limited number of possible buyers, lack of divisibility, etc., etc.

The common measure of values aids greatly in determining the prices, the terms, at which exchanges may be made; the medium of exchange makes possible exchanges which could not be made at all in its absence.

The measure of value function does not add to the value of money. The medium of exchange function is commonly a cause of additional value for money. The source of this extra value is the gains that come from exchange.

Exchange is an essential part of the productive process, where you have division of labor with private ownership

[1] A further reason for preferring "common measure of values" is that expression carries clearly the connotation of absolute values. "Relative values" cannot be "measured," *Social Value*, pp. 26–27.

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of the instruments of production, and private enterprise. Values [1] may be created by changing the forms, the time, the place, or the ownership of goods. All these operations are necessary in an economic system like our own. Those who possess money are in a position to take toll, in values, from those who wish to get rid of the goods which they have produced, and to get hold of the goods which they wish to consume. The holders of money do this by means of the money, and under the laws of economic imputation, these gains are attributed to the money itself, first in the form of a rental value, and sometimes, under conditions later to be discussed, as increments to capital value.

Before giving full discussion to this topic, it will be well to consider certain other functions, which are, or may be, sources of value for money.

The reserve for credit instruments function cannot be fully discussed till we take up credit. Provisionally, it may be said that it is a source of absolute value for money, *per se*, even though the effect on prices may be that, owing to a rise in the values of goods, the prices rise. The fact of credit may even tend to lessen the absolute value of money itself, by lessening the value that comes to money from the medium of exchange function. On the other hand, credit increases exchanges, making possible a vast mass of transactions which without it would not occur at all. Of course, in our hypothetical case above, where the reserve for credit instruments is silver bullion, the reserve for credit instruments function does not add to the value of money at all.

The "bearer of options" function of money is also a source of value for money. It is a valuable service. The

[1] Current text-books, following the Austrian doctrine, define production as the creation of "utilities." This is incorrect. Production is the creation of *values*. *Cf. Social Value*, pp. 119 and 189.

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man who holds money, waiting his chance in a fluctuating market, anticipates a gain which justifies him in holding his capital without return upon it. Money is not alone in performing this service. High grade bonds also perform it. They bear a lower yield per annum to compensate. The service of bearing options is itself a part of the yield, and is itself capitalized, in their case. Two 5% bonds, each equally secure, but one of which has a wide market, while the other has a restricted market, will have a very unequal value.

This "bearer of options" function is often identified with the "store of value" function. The two are properly distinguished. If a man has in mind a definite contingency, at a definite future time, for which he wishes to hold a store of value, he may well find that a high yield bond, or a loan upon real estate, or many other productive investments, will serve him better than money or bonds with wide market. So far as money is concerned, the "bearer of options" function is much more important than the "store of value" function to-day. The reserve of value in liquid form, for undated emergencies (like the War Chest at Spandau, or the big reserve accumulated between 1900 and 1913 by the *Banque de France*), would, from the point of view of this distinction, come under the "bearer of option" function, rather than the "store of value" function. The important thing about the distinction is that for one purpose a high degree of saleability in the thing chosen is necessary, while in the other, such is not the case. The most common case of the "bearer of options" function arises when men hold money, liquid securities of low yield and stable value, short loans, call loans, or bank-deposits, waiting for special opportunities in the market.

The medium of exchange function would exist in a society where business goes always in accustomed grooves, where uncertainty is banished, and where most of the assumptions

of static economic theory are realized. If we push static assumptions to the limit, and assume "friction" of all sort gone, assume that all goods can flow without trouble or expense to the places and persons where their values are highest, etc., even the medium of exchange function would disappear. But if we make our static assumptions a bit more realistic, leaving the "friction" of barter, but banishing the need for readjustment, and the uncertainties that grow out of dynamic changes (whether caused by growth of population, or changes in laws and morals, or in fashions and tastes, or in technical methods, or by accidents of various kinds), then the medium of exchange function will still remain. Given dynamic changes, we have need for a vast deal more of readjustment, and a vast deal more of speculation. I have shown in the chapter on "The Volume of Money and the Volume of Trade" that the great bulk of trading in the United States to-day is speculation, which increases or decreases with the amount of dynamic change, with its accompanying uncertainty and need for readjustment. The major part of the medium of exchange function arises from this. The whole of it arises from factors which purest static theory is accustomed to abstract from. The *whole* of the "bearer of options" functions arises from dynamic change. *This is the dynamic function* of money *par excellence*. It is commonly treated by economists as an unusual and unimportant function. Merged with the store of value function, it is frequently treated as of historical, rather than present, importance. In my own view, it is of high present importance.[1] I should count it as in considerable degree a *function* (using function in the mathematician's sense) of "business distrust"[2] waxing and waning in importance as

[1] This is the view of H. J. Davenport (*Economics of Enterprise*, pp. 301–302).

[2] Kemmerer has shown this to be true of bank reserves. As we shall see, the reserve function is merely a special case of the "bearer of options"

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business distrust increases and decreases. In past ages, this function was primarily concerned with consumption, money and other goods being held, at the loss of interest, as a safeguard against personal danger and as a means of subsistence in emergency. Increasingly to-day, it is concerned with *acquisition* of wealth in *commercial* transactions. When war and domestic violence were the main cause of social disturbance, the consumption aspect was most prominent. That aspect came strongly to the fore at the outbreak of the present war. The heavy selling of securities, which closed the bourses of the world, grew out of men's efforts to get money and bank-credit as a "bearer of options" for the old reasons. The old reasons explain in large measure the accumulation of gold by the *Banque de France*, and by the German Government, referred to above. But to-day, in general, the main purpose of those who use money, or other things, as a "bearer of options" is to make gains, or avoid losses, in industry and trade. The man who, in a given state of the market, is afraid to lend, or afraid to invest, foregoes the income which lending and investing promise, and holds his money. The man who sees uncertainty and fluctuation in the market, and expects them to give him bargains in time, foregoes income for a time, and holds his money. The man who has investments of whose future he is uncertain, and who fears to try any other investment for a time, sells what he has, foregoes income, and holds his money. It is not always possible, in discussing the money functions, to preserve the distinctions between money and credit, or money and "money" in the money-market sense. How much difference is made by these distinctions will best be discussed in our chapter on "Credit."

The significance of the "bearer of options" function is

function. For Kemmerer's discussion of business distrust, see *Money and Credit Instruments*, pp. 124–126, and 144.

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especially manifest, I think, in connection with call loans. The "call rate" is commonly well below the regular "discount rate," or rate for thirty-day, sixty-day, or ninety-day paper. The explanation is to be found, I think, in the fact that the lender of call money does not entirely dispense with its service. He reserves a part of the "bearer of options" function. To be sure, he will, in practive, have to wait an hour or two, or even more for it,[1] and this may well mean that he cannot take full advantage of an option. But the right to demand money on even twenty-four hours' notice is more available than a high-grade bond, as a means of meeting rapidly changing situations. This principle will explain, too, I think, why money-rates in general, including even ninety-day paper, are usually lower than the long-time interest rate on safe farm mortgages, or on real estate mortgages in a city. The thirty-day rate will commonly be lower than the sixty- or ninety-day rate—though exceptions can easily be found, if the thirty-day period is to cover a time of active business, which is expected to grow less active during the second or third month. The influence of the bearer of options functions is not the only influence at work on the rates. If it be objected that the long-time interest rate on high grade railroad bonds or government securities is sometimes lower than current money-rates, or just as low, the answer is that these bonds also share the "bearer of options" function, and that the interest rate on them is, like the money-rate, lower than the "pure rate" of interest. Writers [2] have been accustomed to look for the "pure rate" of interest, *i. e.*, an interest unmixed with

[1] "In New York, for instance, loans by banks 'on call' are subject to repayment within an hour or two after notice is given that repayment is desired." Conant, *Principles of Money and Banking*, vol. II, p. 56. In general, the banks are content if the loan is repaid by 3 o'clock on the day it is called.

[2] *E. g.*, Cairnes, J. E., *Leading Principles of Political Economy*.

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insurance for risk, in the highest grade of government securities. I think that this is a mistake. I think that the "pure rate" should be sought in long-time loans, of assured safety, which lack a general market. Such loans, *at the time they are made*, should represent the "pure rate" *for that time*.[1]

I shall recur to the question of the money-rates, and the question of the relation of the money-rates to the general rate of interest, in the chapter on "Credit."

For the present I would call attention to the interesting case of Austria, where the money-rates are normally very low, because the volume of commerce and speculation is small, and the volume of banking capital, politically fostered, is large; and where, on the other hand, the general rate of interest on long-time loans is high, owing to the scarcity of capital in industry and agriculture, as distinguished from commerce.[2] This case may illustrate, incidentally, that even as a "long run" or "normal" tendency, an excess of currency in a country may lead, not, as the quantity theorists contend, to high prices, but rather to low money-rates. Austria presents simply a striking case of what I should regard as the general tendency. The money-rates and the interest-rates tend to approach one

[1] *One* "pure rate" is a myth, but the notion has some significance, as setting off a body of causes distinct from the money-market factors under consideration. *Cf. supra*, the ch. on "The Capitalization Theory."

[2] See von Mises, "The Foreign Exchange Policy of the Austro-Hungarian Bank," British *Economic Journal*, 1909, pp. 208–209. An able Boston broker, in Feb. 1917, calls attention to the growing difficulty of placing long-time bonds, without very high yield, in view of the scarcity of real capital, despite the exceedingly low "money-rates." I venture to predict an increasing "spread" between "money-rates" and the yield on long-time investments, the longer the War lasts. The view of Davenport and Schumpeter (*Annalist*, Feb. 28, 1916, and *Theorie der wirtschaftlichen Entwicklung*), which would deny the validity of the distinction between money-rates and interest rates, and would make the money-market phenomena the primary cause of all interest phenomena, seems to me indefensible, alike in theory and in fact.

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another to the extent that paper representatives of many different industries get into the "money market"—to the extent that industrial investments in general become saleable enough for it to be safe to finance them by means of short-time banking credit. When banks lend on collateral security of corporation stocks to the buyers of those stocks, they are, in effect, financing the corporation itself.[1] Industries differ widely in the extent to which they depend on the money market for their finances. The difference depends often less on the nature of the industry than on the type of the industrial organization. An individual farmer cannot get the bulk of his credit that way! But there is no reason why a well-organized corporation, assuming it successful in agriculture, might not draw on the money market, even if not so freely as a manufacturing corporation does.

For the contention that the money-rates for short periods are lower on the average than the rates on longer loans, and that the call rates are, on the average, well below all time rates, there is abundant statistical evidence. From 1890 to 1899 in New York City, the average rate on 4- to 6-month paper was 5.99%; the average rate on 60- to 90-day paper was 4.58%; the average call rate was 3.29%. In the same city, for the period from 1900 to 1909, the averages were: 4- to 6-month paper, 5.61%; 60- to 90-day paper, 4.78%; call rate, 4.05%.[2] This last figure for call loans represents an average of quotations at the "Money Post" at the Stock Exchange. While normally the call rates are well below this, occasional high figures, like those in 1907, pull this average up. The high rates at the "Money Post," however, are not always representative. Banks frequently do not charge their regular customers as much as the quoted rates.

[1] *Cf.* the analysis of bank-loans in the United States, *infra*.
[2] Mitchell, *Business Cycles*, p. 146.

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Even more detailed evidence for our thesis is to be found in W. A. Scott's investigation of New York money-rates, for the period, 1896–1906.[1] He studies *two* sets of quotations for call loans, those at the Stock Exchange "Money Post" and those at the banks and trust companies; *seven* sets of quotations (five of which appear regularly) under the head of "time loans," namely, 30-, 60-, 90-day, and 4-, 5-, 6-, and 7-month; and *three* under the head of "commercial paper," namely, double name choice 60- to 90-days, and two varieties of single name paper.

He finds a clear tendency for the rate to vary with the length of the loan, although noting many exceptions. "The difference between these quotations rarely exceeds one-half of one percent, and the general rule seems to be that the influence of time in raising the rate grows less as the length of the loan increases. For example, there is apt to be a greater difference between the quotations of 60- and 90-day paper than between 90-day and four months. Likewise there is a greater difference between 90-day and four months than between 4-months and 5-months paper."

The call rate, though much more variable than all time rates, and sometimes high above them, is, on the average, well below them. For the period, 1901–06, the averages are: call loans, 3.3%; time loans, 4.5%.

The declining influence of differences in time as the length of the loans increases, is what our theory would require. If the "bearer of options" functions of short loans is the explanation of the lower rate on them, it is a factor which would count for less and less as the length of the loan increases. A month's difference is all-important, when the month involved is proximate, say the difference between 10 and 40 days. But it is of virtually no importance, from the standpoint of the man who wishes to

[1] *Journal of Political Economy*, XVI, May, 1908, pp. 273–298.

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meet sudden and indeterminate emergencies, whether the note he holds matures in eleven months or twelve months. The difference between a one-year loan and a five-year loan might, on the other hand, still be important from the angle of bearing options. The factor should cease to have any meaning at all, or at least any appreciable meaning, when the difference is between, say, twenty and twenty-five years.

I have no statistical evidence that the one-year loan can normally expect a lower rate than the five-year loan. At times, short time financing may be even more expensive than long time financing. But such study as I have given to quotations of short-term notes of corporations, as compared with the longer term bonds of the same corporations, would leave the distinct impression that short-term notes fare better in the security market, and yield less return. A complication arises, here, of course, that the short-term note may often lack the safety which a first mortgage bond of the same corporation would have.

The legal tender for debts function calls for a brief discussion. Whatever gives legal quittance from contract obligation, or from legal obligation as for taxes, performs this function. "Legal tender" money, in the strict sense, is not alone in performing this function. Usually a government will by law or administrative practice with the force of law, bind itself to accept forms of money which it will not compel other creditors to accept. Thus, silver certificates, without being "legal tender," are a means of legal quittance from obligations to the Federal Government. Sometimes governments will receive only gold at the customs house. This was true in the Greenback period, when Greenbacks were "legal tender," but not good for payments of customs duties. The reader who is interested in refinements of the legal distinctions among different kinds of

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money will find the thing elaborately worked out by G. F. Knapp, in his *Staatliche Theorie des Geldes*.[1] But "legal tender" money is not always an adequate means of quittance. If the contract calls for corn, or wheat, or North-

[1] Leipzig, 1905. This book has had wide influence on German thinking on money. It is typical of the tendency in German thought to make the State the centre of everything. Recognizing the historical fact that money has originated in a commodity, it holds that the commodity basis is a phenomenon of historical significance only, that modern money is a creature of the State. The money-unit is not definable as a quantity of metal, of given fineness, but rather is a "nominal" thing, present monetary standards being defined by legal proclamation in terms of past standards. The necessity for this reference to past standards grows out of the existence of past *debts*. The State must preserve the continuity of juristic relations, between debtors and creditors as elsewhere. Knapp holds that the *Zahlungsmittel* (legal means of quittance, legal tender) function is the primary function of money, and that it is not a concept subordinate to *Tauschmittel* (medium of exchange). It is not necessary for our purposes to take account of Knapp's theory in detail. He really has little to say about the value of money. Indeed, he confesses, in a later discussion, that his theory is not concerned with that subject! (*Schriften des Vereins für Sozialpolitik*, No. 132, 1909, pp. 559–563.) The amount of economic analysis in the book is not great. It is a striking illustration of the fact that legal thinking is largely concerned with *qualitative distinctions*, rather than with quantitative causal conceptions. (*Cf.* my discussion in the chapter on "The Reconciliation of Statics and Dynamics," *infra*, of the "statics" of the law.) Knapp's book has a forbidding appearance, because of the large number of new terms, based on Greek roots, which he has coined. The German language is inadequate to express his ideas! The Germans themselves have complained much of this. Careful reading of the book discloses, however, that the new terms are admirably adapted to express the distinctions he draws. I think, too, that English readers of the book, who remember enough of their Greek to recognize an occasional Greek root as vaguely familiar, will find less difficulty in giving fixed meanings to his new terms than would be the case with new German compounds. One who takes the trouble to master Knapp's vocabulary will find the effort worth while. Knapp has a high order of dialectical acumen. But the main part of the book has little direct bearing on the problem of the value of money, whether one understand by "value of money" the absolute social value of money, or the reciprocal of the price-level. The main points to be drawn from his discussion are (1) the fact that past debts may tend to sustain the value of an otherwise worthless money; and (2) that the State's willingness to accept money for taxes, etc., may also contribute to its value. Knapp lays heaviest stress on this last point. He seems to concede, however, that the rôle of the State here is not different from that of any other big factor in the market, and that the State's power in this particular is a function of the magnitude of its fiscal operations. Both of these doctrines fit readily into my social value theory. Knapp's

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ern Pacific stock, the best legal tender money is a poor substitute! Witness the "Corner" in Northern Pacific in 1901. It is doubtless true, as Davenport [1] points out, that all contracts, whatever they call for, may be ultimately met, under the common law, by money damages, but that does not mean that a man can maintain his solvency or position in business by offering money when Northern Pacific is designated in his contract. Doubtless even there money will free him, *at a price*, but Northern Pacific stock is at least more convenient for the purpose! A man does not need money to get free from debts, even when money is required by the contract. He can turn in whatever he has in an assignment for the benefit of his creditors, and get free *via* the bankruptcy court. In other words, the legal tender function of money, while it does distinguish money

discussion of methods of regulating the international exchanges by methods other than gold shipments is interesting, and might well be studied by those who are concerned with the exchange situation in the present war. His thesis that the value of silver depended on the course of the exchanges between gold and silver countries, instead of the course of the exchanges depending on the values of gold and silver, seems to me an absurd exaggeration of a minor qualification into a main theory. His doctrine that international relations alone make the purely legal money, without commodity basis, unsatisfactory, I do not accept. I have discussed this general topic in my chapter on "Dodo-Bones," however, and may content myself with now referring to that chapter. It is not true, as a matter of fact, moreover, that the money-unit is no longer defined as a quantity of metal. Our own American practice is sufficient evidence on this point. Knapp has sought to generalize his own interpretation of the history of Austrian paper into universal laws of money! That his interpretations meet authoritative dissent in Austria is sufficiently evidenced by von Mises' discussion, in his *Theorie des Geldes* (ch. on "Das Geld und der Staat"), and in his English article on "The Foreign Exchange Policy of the Austro-Hungarian Bank," British *Economic Journal*, 1909. The notion that the legal tender function is prior to the medium of exchange function I regard as quite indefensible. It is doubtless true, in certain cases, that a government may debase its money, defining the new debased money in terms of the old, and that people who have debts to pay may, for a time, accept the debased money as a medium of exchange. But the limit of this is reached when the old debts have been

[1] *Economics of Enterprise*, p. 257.

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from other goods as a matter of *degree*, does not erect an absolute difference of *kind*.

Under a smoothly working monetary system, where all forms of money are kept at a parity by constant and ready redemption, and where people have no doubt that this redemption will occur, the legal tender quality which attaches to part of the money is a matter of no consequence. It adds nothing to the value of the money. In times of stress, the legal tender quality may be a source of a considerable temporary value. This is especially likely to be true of an inconvertible money. The legal tender quality of the Greenbacks led to a very considerable fall in the gold premium in the Panic of 1873. I have mentioned this point in the chapter on "Dodo-Bones," where part of this discussion has been anticipated. In general, the legal tender quality

paid. Unless other factors (not necessarily redemption), then come in to sustain the value, the value will sink, to a level commensurate with the debasement. The value would generally sink to a considerable degree, in any case, if only the legal factors worked to sustain it. I have gone over this in the chapter on "Dodo-Bones," *supra*. It was only by being a valuable object, and commonly only by being a medium of exchange, that the money could have become a means of legal quittance in the first place. Men would not have made contracts in terms of it, otherwise. And men would cease making contracts in it as soon as it (or other things tied to it in value) ceased to be an acceptable medium of exchange.

Knapp finds a good many phenomena in the history of money for which the quantity theory, and the metallist theory, can give no explanation. He has an exceedingly poor opinion of both theories, and makes many telling points against both. In so far as his doctrine asserts that the phenomena of money are matters of social organization, psychological in nature, I find myself in harmony with it. My dissent comes when he seeks to erect the abstractions of the jurist into a complete social philosophy! Law is only a part of the system of social control, and economic values, while influenced by legal values, are far from being explained when legal factors only are taken into account. Legal factors often play a more direct part in connection with the value of money than in connection with other values, but they do not dominate the value of money.

Recent German literature on money (*e. g.*, Fr. Bendixsen, *Geld und Kapital*, Leipzig, 1912) has been a good deal influenced by Knapp, and there is a fair chance that American students may have to read his book if they wish to understand the next decade of German monetary history. It will be well for Germany if this is not the case!

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may be recognized as a factor in sustaining the value of money, if as a consequence of this quality men take the money when they would not otherwise take it, or take it on terms which they would otherwise not agree to. Where, however, the money is money which they are glad to get in any case, the legal tender quality is a matter of supererogation.

The standard of deferred payments function, as distinguished from the legal tender function and the medium of exchange function, does not add to the value of money. Of course, if the standard of deferred payments is actually used in making the deferred payment, then it finally becomes assimilated to the other two functions. But it is quite possible to divorce them completely. Suppose, for example, that the standard named in a contract in the Greenback Period was gold, but that payment was made in Greenbacks at the market ratio. Or, suppose that the standard of deferred payments should be a composite of commodities, the tabular standard, with the understanding that the index number on the day of payment should determine the amount of money to be paid. In neither of these cases does the standard of deferred payments function supply any reason for an increase in the value of the thing which serves as the standard.

In general, the standard of deferred payments and the measure of value functions do not, *per se*, add to the value of money. The legal tender function may or may not do so. The medium of exchange function, the store of value function, the reserve for credit function, and the bearer of options function, normally do occasion an added value which is to be attributed to money, either as a capital increment, or as a rental.

The question remains, however, as to the relation of the rental value, and the capital value, of money. This ques-

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tion is not easy to answer. As I have already shown, in the chapter on "Capitalization" and elsewhere, various complications present themselves in the case of money. (1) In the case of money, the rental, and the prevailing rate of interest at which rentals are discounted to make a capital value, are not independent variables, but tend to vary together. Thus, whereas increased rentals would in the case of most income-bearers tend to give a higher capital value, this is offset, in the case of money, by the fact that rentals are subject to a higher discount. (2) In the case of income-bearers generally, the magnitude of the income, or rental, is causally prior to the capital value. The capital value, in our illustration of the candle, the disk and the shadow on the wall, is the shadow, while the rental is the disk. This is the general relation insisted upon by the Böhm-Bawerk-Fetter-Fisher line of capital and interest theory. Productivity theories of capital have been criticised on the ground that capital value is not productive, that only concrete capital-instruments are productive, and that they produce, not value, but goods, that these goods receive value from the market, which is reflected back, but discounted, to the capital instruments which produced them, so that, in value-causation the line of causation is precisely the reverse of the line of technological causation. Capital instruments produce consumption goods, but the value of the consumption goods is the cause of the value of the capital instruments. In the case of money, however, this is not true. It is the *value* of the money, the capital value, which does the work that makes a rental value. The value of the money is a precondition of the money-function. So far as money is concerned, both "productivity theories" and "use theories" seem vindicated. There is a "use," an "enduring use" in addition to the "uses." [1] (3) The

[1] *Cf.* Böhm-Bawerk's *Capital and Interest, passim*, particularly his dis-

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capitalization theory, as hitherto formulated, assumes money and a value of money. It is a part of the general body of price theory for which this assumption has been shown to be needed.

With reference to the second, at least of these points, however, it has been shown that money is not unique. Diamonds, and all other goods which have as part of their function the conspicuous display of wealth, likewise perform this function *because* they have value. This gives them an additional value. Diamonds are bought for this purpose, when they would not otherwise be bought, or when they would not otherwise be bought in such quantity. This additional value makes diamonds still more effective as a means of displaying wealth, with a further increment in their value, etc. We seem, here, to have an endless, and vicious, circle in value causation, the value mounting indefinitely, building upon itself, a sort of "pyramiding" process. But the limitation comes from several angles. In the first place, *as* diamonds rise in value, from whatever cause, a smaller and smaller number of diamonds is required to display a given amount of wealth! The increase in the value makes each diamond so much more effective for the purpose in hand that it tends to cut under the cause of the increase. These two tendencies come into some sort of equilibrium. I suppose that by making strict enough assumptions, and limiting the problem rigidly, it would be possible for the mathematician to work out a formula for this equilibrium, letting the increment in value grow feebler with each rebound, till at last it is dissipated in infinitesimals. In the second place, diamonds are not alone in performing this service. They must compete with other precious stones, with the precious metals, with limousines and Turkish rugs,

cussion of Hermann, for an exposition and criticism of the "use" theory of interest.

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with servants and livery, with houses and lots in restricted neighborhoods, with opera boxes and memberships in clubs which confer prestige, with a very wide range of goods, for the detailed discussion of which I would refer again to Veblen's *Theory of the Leisure Class*. The *differential* advantage of diamonds, when it is borne in mind that the conspicuous display of wealth is not the *only* purpose, as a rule, for which any of these things are bought, that the concrete diamond, or other good bought, is a *bundle* of valuable services,[1] of which the displaying of wealth is only one, is not, necessarily very great. For many people, other forms of wealth do better. And, as a rule, diamonds would not perform that service satisfactorily alone. A large number of diamonds, without proper "setting," in clothing, servants, house, opera box, etc., would excite ridicule, and fail [2] in their purpose of gaining social prestige. They must be part of a complex of goods of the same sort, to accomplish their purpose.

Now it is the *differential* advantage of diamonds which makes possible the extra value, in this use. If all wealth were equally serviceable in conspicuous display, if cattle and barns and shares in a coal mine or slaughter-house or glue factory could display themselves as well as diamonds can, and if possession of these things conferred prestige as much as possession of diamonds does, this differential advantage of diamonds would disappear, and with it all extra value from that cause. Diamonds are members of a *class* of goods, a restricted, but still large class, which possess this advantage. We may apply the old Ricardian rent analysis here, arranging goods in a series from the standpoint of their capacity to perform this additional service.

[1] *Cf.* Clark, J. B., *The Distribution of Wealth*, pp. 210–245.

[2] This is not necessarily true among Asiatics, or on the East Side in New York City.

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Bread would, for the purpose in hand, be a "no-rent" good. Ford automobiles are probably nearly no-rent goods now! That the differential factor is a *cause* of value in land, as the Ricardian doctrine seems to hold, is not, I think, true. If all land were of equal quality, and of equal accessibility to the market, all land would still bear a rent, if it produced goods which had value, and if the land were sufficiently restricted in quantity.[1] But here is a case where the differential factor is an actual *cause* of value. If all wealth were equally effective in displaying itself, no form of wealth could gain in value as a means of display.

This proposition calls for one important qualification. The fact that wealth, in general, confers prestige is, undoubtedly, a source of stimulus in wealth creation and acquisition, and a big source of the value[2] of total wealth. It is probable, however, that it is so great a stimulus to production that it defeats itself so far as the values of *units* of goods are concerned. It stimulates production, which reduces the marginal values that arise from other causes. Thus, while a source of additional value to the *aggregate* of wealth, it probably reduces the values of given items.

I have dwelt at length on the case of diamonds, because principles applying there will give us important clues to the case of the value of money.

Money, by being valuable, is so far equipped to perform the money service. But its *differential* advantage over other valuable things comes from its superior *saleability*. Its original value comes from non-monetary causes, and

[1] The adherent of the Ricardian analysis who would deny this may fight it out with Clark, Fetter, and A. S. Johnson!

[2] A friendly critic—with a radically different theoretical point of view—feels that I am here playing fast and loose with the word, "value," meaning sometimes "total utility," sometimes "marginal utility," sometimes "relative marginal utility," and sometimes "price." I *never* mean any of these things by "value," when used without qualification, in this book. I mean always *social economic value*, conceived of as *absolute*.

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has been sufficiently explained in the chapter on "Dodo-Bones" and in the chapter on the "Origin of Money." The extra value which comes from the money functions rests chiefly in its superior *saleability*. Saleability is itself a cause of additional value. But here again we may arrange goods in a series, starting with the least saleable, and ending in money. Money has an advantage, but its advantage is not absolute. Under a system of free coinage, gold bullion is virtually on a par with coin, and even without free coinage, bullion is for many purposes as good, and for foreign exchange may be better. Modern credit, moreover, as has been indicated before, tends to add to the saleability of all goods, and so to lessen the differential advantage of money.

Here, again we may see the principle that the extra value that comes from the differential advantage tends to limit itself. As the money-use adds to the value of money, a smaller amount of money is required to do the money work, and hence the source of the increment of value is cut under. This principle will partly explain why the rental of money cannot be capitalized in the same way that the rental of land can be. Increasing the capital value of land is not the same as increasing the productive power of land. But increasing the capital value of money does mean an addition to the power of a dollar to do money work. It tends, moreover, to lessen the work that there is for money to do, both by reducing the total amount of trading, and by increasing the incentive to the use of substitutes for money. Only a part of the value of the services of money, thus, can be added to the capital value of money. There is a further point which is important, as differentiating money from diamonds: much more of the value of the services resting on the value of diamonds can be added to the capital value of the diamonds than is the case with

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money. The reason is that diamonds may give forth a continuous flow, *in the same hands*, of the service of conspicuous display of wealth. Money, however, can perform most of its services for a given owner *only once*. For a given owner, it can serve only once as a medium of exchange. For one owner, it can serve only once as legal tender for debts. It can serve indefinitely as a store of value, or as "bearer of options." In these cases, however, the relation between value of service and capital value does work out in accordance with the capitalization theory. The money this held brings in no money income. It is held thus only if the services which it performs are equivalent to the income which would come if it were alienated, and something which would bring in a money income were purchased in its place. Money may have added to its capital value the value that is created by *one* marginal exchange, but the whole series of values which a dollar may create in exchanges cannot be capitalized, if only because the same owner cannot get them all. This holds strictly true only so long as no credit arrangements exist. If loans of money can be made, then the lender can take toll on successive exchanges, and get an income which may be capitalized in part, subject to the limitation already discussed, that increasing capital value of money cuts into the rental, and so, in large measure, destroys its own source.

Where money is not freely coined, there may be an increment, growing out of the capitalization of the money-services, in the value of the coin. The coin may be worth more than the uncoined bullion. This need not be true. If the amount of money work to be done is not increasing, it will not be true, unless the value of the bullion declines, and need not be true then. But an agio on coined over uncoined metal is quite possible, and has frequently occurred. Such an agio has limits, however. In the first place, the

bullion may be used as a substitute for coin, so lessening the amount of work there is for coin to do, and lessening the source of the agio. Bullion would tend to rise in value from being thus employed, and coined money would lose in value from a reduction in the services it performed. Further, *anything* which has more than ordinary saleability may be used as a substitute, in one or another capacity. Again, the agio, if it appeared in a country where men are accustomed to thinking about money, might well arouse distrust, lessen the scope of the coin still further, and so cut into its own source. But such agios have appeared, and while a pure case, where the sole source of the agio is the values created in the money-functioning, is hard to find, I think it is not to be questioned that cases where this is part of the explanation have arisen. I should be disposed to find part of the explanation of the rise of the rupee in India after the closing of the mints in 1893 in this factor. There seems to be evidence, however, that Laughlin is right, in part, in ascribing the rise to an expectation of the adoption of the gold standard.[1]

Modern money, in general, however, rests on a system of

[1] I have been unable to satisfy myself that anyone has made a sufficiently thorough study of the course of the gold premium on the Rupee, the agio of the Rupee over its bullion content, or the course of prices in India, during the period from 1893 to 1898, to justify confident statements as to the comparative strength of different elements in the explanation of that history. Kemmerer states (*Money and Credit Instruments*, p. 38) that he can find no evidence at all to support Laughlin's view of the matter. (See Laughlin, *Principles of Money*, pp. 524 *et seq.*) J. M. Keynes, however, in his *Indian Currency and Finance*, p. 5, says: "The Committee of 1892 did not commit themselves; but the system which their recommendations established was *generally supposed* [Italics mine.] to be transitional and a first step toward the *introduction of gold* [italics mine.]." In the arrangements of 1893, moreover, a ratio between English gold and the Rupee was established, of 16d. to the Rupee, even though provisions for holding the Rupee to this ratio were left till the establishment of the "gold exchange standard," several years later. Keynes, on p. 3, discusses the arguments of the silver party against the introduction of gold, which is further evidence that the action of the Committee was understood as looking toward a gold

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free, even where not strictly gratuitous, coinage. Coined metal thus rarely gets, save to a limited extent or temporarily, an agio over uncoined bullion. Uncoined bullion is acceptable in a host of places where coin would otherwise be used, particularly in reserves for credit instruments. Bullion is even superior in international trade as a medium of exchange. Credit paper (particularly bills of exchange), is superior to both in international exchange, as a medium of exchange, because of various reasons of economy. Such paper is even used in reserves in many places, particularly by the Austro-Hungarian Bank.

The fact of free coinage means, substantially, that the state has made the money form a free good. How much value is thereby destroyed we may best see if we ask precisely how much the money form could mean *at the limit.* Initially, the money form means simply the certification of weight and fineness by a trusted authority. It saves, therefore, the delay and expense of testing the weight and fineness by assay, etc. It saves the trouble and delay of subdivision of a formless metal. It averts many difficulties. For small retail transactions, indeed for retail transactions in general, the conveniences of coined over uncoined metal are very great. Small transactions do not justify the trouble and expense of assaying and weighing and subdividing gold! In a country, therefore, where the bulk of

standard. There is *some* evidence at least for Laughlin's view. That his view offers a complete explanation, I think unlikely.

Kemmerer's admirable *Modern Currency Reforms* (Macmillan, 1916), is at hand while the proof sheets are being revised. It is interesting to note that he finds the statistical evidence regarding Indian prices, trade, etc., far too scanty to justify positive conclusions as to the causes governing the course of the rupee. He prefers, rather, to rest the case for the quantity theory on *a priori* reasoning and statistics for the United States. *Loc. cit.*, pp. 70–71. In the chapter on "Dodo-Bones," I have suggested that India might come nearer than other countries to actualizing the assumptions of the quantity theory. On Kemmerer's showing, however, it appears to be a liability, rather than an asset!

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the money work is in effecting small transactions, we might expect a considerable agio for coined over uncoined metal. This would be especially true if that country had few facilities for credit substitutes for the coin, particularly for small transactions. In a country like the United States, however, where checks are often drawn for amounts less than a dollar, and where the bulk of the gold, or standard money, is to be found, not in circulation but in reserves, one need not anticipate that the medium of exchange function would give a big agio to gold coin, even if free coinage ceased. So long as coinage means merely a certification of weight and fineness, this conclusion will hold. For purposes of large transactions, the item of weighing and assaying would not be serious. Indeed, American banks are accustomed to weigh even gold coin, in quantity. It goes by weight, rather than by tale, and if light-weight, it counts for less than its nominal value. The writer knows a bank which has a considerable store of light-weight gold coin that has been in its vaults for over twenty years. Such coin may be counted at par in reports by the bank to the Government.[1] It might be paid out through the window to customers, who would not weigh it, in case of a "run" on the bank. But it cannot be used in dealings with other banks without loss.

Does the legal tender aspect of coin count for more? Under a smoothly working system of free coinage, where moreover, all forms of money are kept at a parity by ready redemption, we have seen that the legal tender feature makes no difference. Would it make a difference where coinage is restricted? If we assume that the use of checks for small payments, and the use of bullion in reserves, in

[1] This is a national bank. In the same community, the writer asked the president of a State bank about his gold reserve, and was told that light-weight gold coin could not be used, since the State bank examiner made a practice of *weighing* the gold of State banks.

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a given case, prevents the existence of an agio growing out of the other functions of money, I think it clear that the legal tender feature alone will not create one. But suppose that there is an agio from other causes, will not the legal tender aspect of money tend to increase it? Will not men demand coin, which bears an agio, rather than bullion, when they have the right to demand either? And will not the agio then, in a way, grow out of itself, a bigger agio appearing, because an agio has already appeared? It does not seem to me that this need follow. If there be an agio, then creditors will demand either coin, or bullion *on a different basis from coin.* But so long as they get the benefit of the agio, either in the form of coin, or of a larger amount of bullion, particular circumstances, rather than a general rule, will determine which they will demand. The banker might well prefer bullion. The international banker would prefer bullion. The man who wishes money for retail transactions will take coin. Men will use the legal tender quality of money as a means of getting the benefit of what agio there is (though contract right, where the contract calls for coin, would accomplish all that a legal tender law would accomplish), but whether they take 23.22 grains of coined gold, or 25.5 grains of gold bullion, will depend on which they prefer in the circumstances. I do not see that the legal tender feature adds anything to the case of restricted coinage that it does not add to the case of free coinage.[1] In either case, there will be temporary emergencies, when panics arise, when legal tender money gets an agio over any possible substitute. Solvency may depend on it. This might arise under free coinage, if the panic were acute, and if settlements had to be made imme-

[1] Legal tender can add to value of money only when it confers an option on the *debtor*. In the case discussed, it is the *creditor* who has the option. But options are not necessarily valuable.

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diately. But as long as there is time for men to work things out, I should not expect the legal tender feature, *per se*, to add to the agio of coined metal even under restricted coinage.

In general, the possibility of an agio for coined metal, under restricted coinage, rests on the extent to which coin has a unique function. In so far as substitution is possible, there is no room for an agio. For many purposes, bullion may be substituted. To the extent that credit is developed, and is flexible, various other substitutes are possible. To the extent that barter can be used, still other substitutes are possible.

Among an ignorant people, little accustomed to developing new expedients, having an economic life that is not flexible, having an economy based on petty economic units, having little development of credit, accustomed to the use of money in most transactions, money might well be, in many connections, highly important if not indispensable. In England, before the War, where no bank-notes under five pounds were in circulation, and where small checks were little used, an agio on coin might appear if coin got so scarce as to be inadequate for retail trade, but for bank reserves bullion would have served virtually as well as coin, and with the stock of coin she had at the time England could have gone on for a long time indeed with no more agio than just enough to prevent the melting down of the coin. In the United States, where checks can be used for very small transactions, and where a high percentage (very conservatively estimated by Kinley at from 50 to 60%) of retail business is done with checks, the agio on coins of a dollar or over growing out of retail trade might be expected to be very slight. On the other hand, the legal requirements for reserves in specified types [1] of money might, in

[1] As Davenport has pointed out, money is really moneys—there is a hierarchy. *Cf. Economics of Enterprise*, pp. 256–259.

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time, lead to some agio. I do not think that the reserve function in England would ever do so. If we could combine our use of checks in retail trade with England's absence of legal reserve requirements, I should think that the agio would have little chance indeed of growing great! If to this could be added Canada's extensive use of small elastic bank-notes, the chance would be still less. If bank-notes of one dollar could be issued, the agio would be less still.

It is in the case of coins of very small denomination that the agio might appear most readily. Such coins, if limited in amount, and if given the usual restricted legal tender,[1] do not need redemption to circulate at face value, even when made of baser metals. It is quite thinkable that such coins should, even when redeemable, circulate at an agio over the redemption money. In small retail transactions the need for money to do business is most imperative. Even here, however, there is large flexibility. The present writer, during the period of money stringency in the Panic of 1907, made much larger use of checks in very small payments than was his usual practice, and the same was true of various of his acquaintances.

I think that the quantity theorist, with his doctrine of an unlimited agio through the restriction of coinage proportionate to the restriction, is best understood if we say that he has taken an exaggerated estimate of the imperativeness of the need for formed money in the smallest retail

[1] The restricted legal tender of small coins, where the coins are limited in amount to the needs of retail trade, is virtually an unrestricted legal tender, in practice, and amounts, in fact, to redemption. The coins are capable of being used where large coins, of standard metal, would otherwise be used, or where checks, redeemable in standard coin, would be used. Legal tender is vastly more effective with reference to a small part of the money system than it would be with the whole of the money supply. The same is true of the privilege of using a particular form of money in paying taxes. *Cf.* W. C. Mitchell's discussion of the "Demand Notes," *History of Greenbacks, passim.*

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transactions as typical of the whole situation.[1] I have elsewhere shown, however, that, in so far as Kinley's figures for 1909 give us a clue,[2] the total retail trade of the United States is less than one-eleventh of the total of all transactions calling for the use of money and checks. Of that total retail trade, the part in which money is actually used is, on Kinley's high estimate, between 40 and 50%,[3] and the part in which money is imperative is much lower still. Small retail transactions do not give the type for the pecuniary transactions in the United States! They more nearly do so in India, and the possibility of agio is, doubtless, greater there. For our larger transactions, there is an almost indefinite possibility of substitutes for coined money, if profits can be made by making the substitutions. Beating the agio would be a source of profits.

I repeat what was said in the chapter on "Dodo-Bones" differentiating this doctrine of the agio from the quantity theory doctrine: (1) This doctrine presupposes value for the money article from some non-monetary source. It relates only to a differential portion of the value of money. (2) This doctrine denies the law of proportionality even for this differential portion. (3) This doctrine is concerned, not with the general level of prices, but with the absolute value of money measured in the ratio of coin to bullion.

Under the system of free and gratuitous coinage, no agio

[1] *Cf.* Mitchell's account, (*Ibid.*, pp. 166–173), of the premium on minor currency, during the Civil War. Pennies were used in rolls of 25 as a substitute for silver quarters, which had left the country under Gresham's Law. The premium was due primarily to the need for small change, rather than to bullion content, though the latter was a factor even for coins made of baser metals, in 1864.

[2] *Cf.* my article in the *Annalist*, Feb. 7, 1916, "The Ratio of Foreign to Domestic Trade," and the chapter, *supra*, on "The Quantity of Money and the Volume of Trade."

[3] Kinley's figures show a much lower percentage of money than this. He is anxious not to overestimate the extent to which checks are used, however, and so gives the figures of 50 to 60% of checks as a safe lower limit.

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of coined over uncoined bullion is possible. Where small brassage charges are made, as in France (or as in England, where the interest lost during the period of coinage is charged to the man who exchanges bullion for coin at the Bank of England) there may be an agio of this amount, though it often happens that this agio disappears, particularly in England. So perfectly is bullion a substitute for coin in England, that the Bank of England will often forego its privilege of taking the slight toll in interest, and will credit men depositing bullion with as much as if they had deposited coin. From what has gone before, as to the possibility of an agio, I conclude that the United States, England, Canada, and possibly France, would be unable to make large brassage charges. If the brassage charge were much larger than the charges made by reputable and well-known jewelers for assaying and weighing, etc., there would be a large substitution of bars for coins, and the mints would have little to do. However, it needs no arguing that with free coinage, and either very low or no brassage charges, the value of bullion and of coin will, quality for quality and weight for weight, be virtually identical, within a narrow range of variation.

What, then, shall we say of the way in which the forces drawing gold from the arts into money manifest themselves?

How describe the equilibrium between the value of gold as money and the value of gold in the arts? How construct intersecting curves, presenting a marginal equilibrium? The problem is baffling, and I frankly confess that what I shall have to say does not satisfy me. I hope that some critic may solve the problem better. I can point out the difficulties of the situation, and can indicate reasons why the sort of solution which the economist's training in marginal analysis leads him to desire are not easily found. But

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I fear that I shall fail to satisfy the demand for an application of curves to the problem!

The first difficulty is that we are barred from the use of our yardstick. Money is the measure of all things in economic theory—except money and gold bullion! Of course there are economic values other than those of gold which do not actually come into the market, but even there we can commonly, by the accountant's methods, make use of the money measure. In very high degree, our conventional curves of all sorts run in money terms, and assume a fixed value of money. Clearly the money curve of diminishing value for gold would tell us nothing. The value of gold might sink as its quantity increased, but then the value of the money-unit would sink *pari passu*, and so the curve, with ordinates expressed in numbers of dollars per ounce, would not sink. The value-curve of gold, expressed in money, is a straight line, parallel to the X axis. Possible substitutes in the form of abstract units of value,[1] or of composite units of goods, of an assumed fixed value, will have to be used if anything is used, but they are less satisfactory in the application, and leave the analysis a good deal less realistic.

If this were all, the problem would be easy! But there is a second difficulty. We find the factors requiring gold as money, if summed up in a curve, presenting themselves as a call for the temporary rental of the gold. The money functions are performed, in general, not by keeping gold, and getting an endless series of uses from it, as in the arts, but by passing it on, sooner or later. Even in the case of the reserve function, the bearer of options function, and the store of value functions, it is not expected to hold the gold indefinitely—always there is the anticipation of some time when it will be passed on again. A curve for gold in

[1] *Cf. Social Value*, 183–184.

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the monetary employments, therefore, would be a curve showing the diminishing values of rents, or particular services rather than a curve for capital values. The curve for gold in the arts, however, would be a curve showing the diminishing *capital values* of units of gold, as the supply in the arts is increased. The two curves do not run in common terms. But another and more fundamental difficulty. In the case of wheat, we may construct our curve free from complications, in idea, at least. On the base line, we lay out quantities of wheat. For each quantity of wheat, we erect an ordinate, a sum of money, or a number of abstract units of value, as the case may be. Connecting these ordinates, we have a curve, showing how the value (or the money-price) of wheat descends as the quantity of wheat increases. Given the shape of the curve, and given the number of bushels of wheat, the marginal value of the wheat is given. In idea, at least, it does not matter, for the shape of the curve, whether the amount of the wheat is great or small, whether the marginal value of the wheat is low or high. If there are ten thousand bushels only in the market, wheat will be worth $5 per bushel. With 100,000 bushels, it is worth 40c. The fact that there are 100,000 bushels does not lessen the magnitudes on the higher portions of the curve. The nature of the services which wheat performs is not affected by its value. This is *not true of gold*, either in the arts or as money. In the arts, I have already shown that one function of gold is as a means of conspicuously displaying wealth. Gold is like diamonds in this. *Because gold is a valuable*, it gets an additional valuable service. This additional valuable service enhances its value. The thing is checked, however, before an endless circle is created, by the fact that as gold rises in value a smaller amount of gold will display a given amount of wealth. The value-curve for gold in the arts,

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therefore, is not a simple thing like the curve for wheat. It turns upon itself, in ways that I see no graphic device for presenting. This is even truer for money. Men wish to have, when they seek money, a quantum of *value* in highly saleable form.[1] The curve for the value of the services of money presupposes a fixed capital value of money. It is the capital value of money which does the money work. Given a value of money, and given the values of goods, we may see how much money is required to effect a given exchange or perform some other money service. Then, knowing how much value will be created by each exchange, or other money service, we may arrange the services in a series, a scale of descending importance, and get a curve. This curve is, in fact, the curve which presents itself in the money market. There we find a curve, running in terms of money itself, so much money for the use of money for such a length of time. But this is a curve of demand for money funds, rather than for gold as such. The "supply" that corresponds to this "demand" is, not gold, but all manner of credit instruments, chiefly bank-deposits, expressed in terms of gold. Such a curve is clearly not to be put into equilibrium with the value-curve for gold in the arts, (1) because it assumes a fixed value for money (2) because it is concerned with temporary rentals, and not capital values, and (3) because the demand it expresses is not for the use of gold alone.

We may get some aid in reducing these complexities to familiar terms if we employ the device of assuming an equilibrium between gold in money and gold in the arts, without trying to explain in quantitative terms how that equilibrium is arrived at, and then see what causes will lead that equilibrium to shift. In getting the laws of *change*,

[1] *Cf.* Carver's contention that "the demand for money is a demand for value." "Concept of an Economic Quantity," *Quart. Jour. of Econ.*, 1907.

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we may get closer to the causes of the phenomenon itself. The effort to reduce the thing to precise mathematical form requires a degree of simplification which seems to me likely to rob an answer of much significance.

Assuming that the equilibrium is reached, we may see what factors would tend to cause gold to go into the money-use, and what factors would tend to draw gold into the arts use. We may also see how these changes from one side or the other would modify the value of gold.

Assume that a manufacturing jeweler has extra demand for his products. His products, of course, are composites of gold, labor, and other raw materials, etc., but part of the extra value that comes to his products attaches itself to the gold that is in them. He now has an incentive, which was lacking before, to melt down full weight gold coin in his possession, or to buy gold bars which might otherwise have been coined. To buy the gold bars, however, probably means that he must have accommodation at the bank. He borrows from the bank the amount he needs, giving a short-time note, since he expects to make up his gold and market it in a fairly short time. The paper of manufacturers of gold will commonly stand well in the "money market," and this is especially true of those in whose hands the gold is not worked up into such specialized forms that the value of the bullion is a minor matter. (I find it necessary to refer frequently to the money market, though a full analysis of money-market phenomena cannot come till after our discussion of credit.) If he must borrow to get the gold, *then the money-rates will come into comparison with the profits he expects to make from working up the gold.* This will usually be true even if he melts down gold coin already in his possession. He might deposit that gold, and so reduce his expenses at the bank, either buying back his own discounted paper, or getting interest on daily checking

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account. If he has to borrow to get the gold, he may get it either by drawing gold from the bank directly, or by giving a check on the bank to a bullion dealer, which may ultimately lead to a diminution in the bank's supply of gold. However he gets the gold, there is bound to be some reaction, (1) on the bank's supply of gold, (2) on the supply of loanable funds in the money market, and hence (3) on the money-rates themselves. If he borrows from the money market, he affects the money-rates directly (even though probably, in a given case, not noticeably); if he melts down coin, instead of depositing it (or paying it out to others who may ultimately deposit it) there tends also to be less gold in the bank's vaults; if he buys gold with his own funds in the bullion market, the supply of current bullion for which the banks also compete is reduced. In any of these cases, the banks have less gold than would otherwise be the case. The relation between gold reserves and the supply of money-funds has been partly discussed already. We have seen that there is no proportional relation, as Fisher, and other quantity theorists contend. Loanable funds, on a given gold reserve, are highly elastic. But the elasticity calls for higher money-rates, and higher money-rates tend to reduce the volume of trading, and check the demand. Borrowings from the money market by workers in gold, therefore, are much more significant than borrowings by other manufacturers or merchants, because the latter are content with credit devices, for the most part, while the workers in gold withdraw gold itself from the money market. It is, moreover, harder for the money market to resist extra demand from the jewelers than from many other interests. The assets of the jewelers, especially from those who do not work the gold up in highly specialized forms, are exceedingly liquid. Their paper, therefore, is exceptionally good in the discount market. Usually, too, the larger

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jewelry houses have specially good general credit and high reputation. There is, then, less disposition for the market to look askance at an unusual supply of their paper than would be the case with many other sorts of paper. They tend to get about as low rates as anyone else in the market. A money market under centralized control seeking to protect its gold, might tend to raise discount rates on jewelers' paper, but a competitive money market is very unlikely to do so.

An increase in the value of gold in the arts would, thus, reflect itself pretty quickly in the money market, first in the form of added value for the services of money, and then, secondly, in an increase in the capital value of money. Indeed, an increase in the value of a single rental *is* an increase in the capital value also, since the value of the single rental is one portion of the capital value. Not only does it mean a higher capital value for gold, but it consequently tends to mean a higher "price." It does mean a higher "price" for present money as compared with future money. It tends, also, to mean a higher "price" of money in terms of other goods. Meeting higher money-rates, all borrowers tend to borrow less, and to buy less, to offer less money for goods. It need not follow, however, that the rising value of gold reduces prices. The rise in the value of gold in the arts may well be a manifestation of a general rise of values. General prosperity, rather than causes affecting the value of gold in the arts alone, may have occasioned the increasing demand for gold in the arts. This would mean rising values for goods at large. It might well be, therefore, that the rise in the values of goods would offset the rise in the value of money, and that prices of goods would rise at the same time that gold is being withdrawn from the money market to the arts.

Business in general, as well as the jewelers, may be mak-

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ing increased demands on the money market. This would tend still further to raise the money-rates. It would also, however, tend to increase the supply of money-funds. Commercial and industrial paper, in a time of buoyancy and expansion, is particularly acceptable to the banks, and they are likely to expand their loans despite the failure of gold reserves to keep pace. They simply get along with smaller reserves. Higher money-rates in such a case tend to reduce the volume of business, but need not actually reduce it, if there are bigger profits than before anticipated in business transactions. Not absolute money-rates, but money-rates in relation to anticipated profits from the use of money, are significant. There is large room here for flexibility, elasticity, etc. There is much slack to be taken up by the money-rates, much slack in the fluid substitutes for money in various functions, and much slack to be taken up by the volume of trade. But all this will best appear after our discussion of the money market.

I have said enough to indicate the character of the factors immediately determining the equilibrium between gold in the arts and gold in the money employments. In the preceding discussion, also, I have discussed the more fundamental factors governing the value of gold in both employments. The problem of translating the fundamental theory of value into money market terms, and of translating the phenomena of the money market into terms of fundamental values is not easy. Most of our value theory in the past has been concerned with individual psychology, Crusoe economics, trading in small markets with a few buyers, barter transactions, etc. It has been abstract and unrealistic. The practical students of the money market, who are immersed in the facts of modern money, have got little help from it, and have often been scornful of it. I hope to be able to contribute something to bringing the two methods

of approach to common terms. They are correlative aspects of the same problem. Each gives highly important clues to the understanding of the other. Neither can be understood without some understanding of the other. A theory of value which cannot be applied in the money market, the stock exchange, and the great field of modern business generally, has small *raison d'être*.

In the next chapter I shall take up the problems of credit, and the money market.

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CHAPTER XXIII

CREDIT

ANALYSIS and description are much more important than definition. Definition at the beginning of a study is frequently a fetter, rather than an aid to thought. This is especially true in a field where phenomena overlap and interlace, and where the "pure principle," "essence" or "*Wesen*" of the thing defined never presents itself, but is only to be reached by violent abstraction. To pick out one element—as "futurity"[1]—as marking off credit from other things would be an illustration of this. Or to take the notion of *promise*, or contract obligation, in connection with futurity, is likewise to limit the field unduly, on the one hand, and to include things which do not belong there on the other. Thus, a contract whereby A is to build a house for B by the end of a year, receiving at that time, or in instalments as the work proceeds, a sum of money, is not a credit transaction. We have, however, promise, futurity, and a future payment of money all called for in the contract. On the other hand, if A sends B a telegraphic order for money, which B receives three minutes after the money is entrusted by A to the telegraph company, we have a credit transaction, with no element of futurity in it. Certainly there is less of futurity there than in the case where a laborer, working all day, is paid only at night for work done in the morning. Futurity enters into the values of all goods which are not destined for immediate consumption—capital values of long-time goods are discounted present worths of *future*

[1] *Cf.* Laughlin's *Principles of Money*, p. 73.

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values. Contracts, promises, and beliefs in promises run through the whole range of economic life,—the domestic servant, paid weekly, illustrates all three. Yet only a special class of these economic activities are commonly counted as credit transactions. Credit is really a part of the system of economic value relations not easily marked off in economic nature from the rest. Its clearest *differentiæ* are juridical rather than economic. It will be the purpose of the present chapter, in part, to blur, rather than to make precise, the line between credit and non-credit in economic phenomena, and to assimilate the laws of credit to the general laws of value.

This will involve, however, a careful analysis and precisioning of certain phenomena commonly counted as credit phenomena. Buying and selling on the one hand; borrowing and lending on the other: the distinction seems clear. It is in law. But what is it in economic nature? When a merchant discounts his own note at the bank, it is borrowing. When he discounts the note of another, his debtor, it is selling. If he writes before his endorsement of the note, "without recourse," (unusual at a bank, but common enough with real estate mortgage-notes) he has made a perfect sale, and is entirely out of the transaction. Is it, however, in economic nature a different transaction from the original one in which he got the note from a borrower? Legally bonds are credit instruments, and stocks are not. Stocks represent *ownership*. But practically, as an economic matter, both represent the alienation of control, on faith, to a small group of men, and practically, too, the difference between preferred stocks and bonds is often very slight. Whatever the legal rights of a bondholder, under the terms of his contract, the legal fact itself often is, under the growing practice of receiverships, that he cannot exercise his right to foreclose without such difficulty that it

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doesn't pay to do it. Very frequently indeed the junior bondholder will come out of a reorganization as simply a preferred stockholder—which is what he practically was all the time. He couldn't vote as a bondholder, but his voting rights as a stockholder commonly mean little! As a bondholder, if he held enough bonds, he might even have more influence on the affairs of the corporation than as a stockholder. The market is moved by other forces than the legal distinctions in corporate contracts! And market facts are not necessarily correctly told by the accountant's categories either. I shall trouble myself little, in what follows, with the juridical and accountancy problems of credit, save in so far as these bear directly on the more pertinent economic aspects of the matter. I am interested in the question of credit as a part of the problem of value and prices—and particularly from the standpoint of the problem of the value of money.

What difference is made in values and prices by lending and borrowing? What kinds of lending and borrowing are there? What shall we say of bank-notes, of bank-deposits, of bills of exchange? What difference is made by the money market? Behind the legal forms and the technical methods, what are the psychological forces at work? How are these psychological forces modified by the technical forms and methods? What are the economic differences between long and short time loans? How shall we draw the distinction between the "money-rates" and the long time interest rate on "capital?" Why can some things serve as collateral in the money market when others cannot? What sorts of credit are appropriate to commerce, to manufacturing, to agriculture? Is credit capital? Is an increase in credit an increase in values? The last two of these questions imply that we have a definition of credit. Perhaps the answers to some of the other questions may

have given us such a definition. But analysis and description will precede definition.

The etymology of "credit" has sometimes been taken as the clue to the meaning of the word for economics, and the idea of confidence, or belief, has been made the heart of the matter. A man has good credit when others have confidence in his integrity, etc. Men lend to others when they can trust them to repay. Doubtless something of this sort was responsible for the original choice of the word. But when loans are made on good mortgage security, or on collateral security, the personality of the borrower may count for little or nothing. Confidence there is, but not confidence in the intentions of the borrower. The confidence is in the "goodness" (*i. e.*, the value and marketability) of the collateral. The same questions are raised by the lender here which he would raise if he were going to buy the thing, instead of lending with it as security. None the less, I think that in the etymology of the word we have an important clue. We must generalize the notion, however, beyond the limits of confidence in personal intentions. It involves confidence in the general economic situation, in the future of business, in the permanence of values, in the certainty of future incomes, etc. Thus viewed, the element of confidence, though important in highest degree, is not peculiar to the phenomena which we call credit phenomena in economics. It appears wherever there are values which depend on future events. One does not need much confidence in buying potatoes or apples or meat—though in the case of meat quite a lot of confidence may be involved—and misplaced! But whenever the future is involved, whenever capital values of any kind are involved—lands, stocks, bonds, houses, horses, manufacturing equipment, etc.—the element of belief, confidence, hopeful attitude toward the future, is quite as much present as in the case of

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a loan. Nor is the element of personal confidence less present, often, in these things than in the case of a loan. Very often the value of a horse may depend in considerable degree on the integrity of the man who offers it for sale; the value of a piece of land may be much enhanced if a trustworthy owner makes certain statements as to the yields he has got from it; the values of stocks (really credit instruments, from the angle of economic analysis) may depend very much on the personality of the organizers and managers of a corporation. Personal prestiges may count for much more in these cases than in the case of a collateral loan.

Further, in connection with the element of belief, or confidence. Borrowing is expensive, and men do not borrow for amusement. That borrowing and lending may increase, it is not enough that lenders have confidence in the ability of borrowers to repay. Borrowers must also have confidence in the future of their businesses, in their ability to make enough out of the loan to pay the expense involved, and have a surplus left over. I abstract here from consumption loans. They play a very minor role.[1] The analysis in an earlier chapter, based on Kinley's figures, showing that retail trade is less than one-eleventh of the total pecuniary transactions in 1909, and that the percentage of credit instruments used in retail trade is much lower than in other transactions, will justify us, when quantitative questions are involved, in abstracting from consumption loans. Since such loans will be chiefly employed in retail buying, and since we know that most retail buying does not result from loans for consumption purposes, we may conclude that modern credit is overwhelmingly of a

[1] The main modern type of loan for non-business purposes is the public loan for war purposes, or to meet fiscal deficits. In the case of war loans, the emergencies are often so great that the rate of interest makes little difference.

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different sort. Most of it arises from business activities of one kind or another, and rests on expectation of profit and loss.[1] Such loans are not made when borrowers, as well as lenders, have not confidence in the transactions they mean to put through.

So far the thing has run in terms of individual calculation of profit and loss. But even the most sagacious business men do not play a lone hand. No one is uninfluenced by the expectations and feelings of others. In general, business confidence is in large degree a matter of social psychology, resting on suggestion, contagion, etc., as well as on cool calculation of profit and loss. Even where men are able in considerable degree to free themselves from the prevailing optimism or pessimism, they must take it into account. The man who extends his business when nobody is in the mood to buy, when no one will make contracts with him, runs a very fair chance of bankruptcy, even though there be, in the technical facts of industry, no reason for the prevailing pessimism. A man with large resources, which are not fully employed, seeing that the prevailing "bad business" is "largely psychological" may, indeed, take advantage of the fact, get his labor and raw materials cheaply, and produce some staple in advance of his market. If he can afford to hold his surplus, he may make large profits by so doing. But usually business men will not, in such a situation, have the surplus resources to enable them to put through such an undertaking, and hence, even though they may recognize that the rest of the business world is irrational, they must, perforce, conform to its irrationality, and their sober estimate of the prospects of a given undertaking may be just as much adverse as if they shared the feeling of gloom which all about them feel.

[1] No longer true of Europe, probably, since the huge war debts have been incurred.

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They meet it from the banker from whom they wish to borrow. Even if able to borrow, they meet it from the dealers to whom they are accustomed to sell their products. The prevailing gloom is as much a fact with which they must reckon as is the price of their raw materials, or the technical qualities of those raw materials.

Further, business confidence is not a matter in which each man counts one! There are centers of prestige, men and institutions whose attitude toward the future counts heavily indeed in determining the attitudes of others. These prestiges may arise from various causes. Recognized wisdom and probity may give a man great prestige in economic matters. There are financial writers and students of the market, not necessarily men of great wealth, whose opinions are exceedingly influential in making business confidence. The wisdom without the probity is not enough. Some men, known to be sagacious students of the market, have been known to succeed in their plans by telling the truth, with the result that everybody else did the wrong thing! They made business confidence, but not the sort that was complimentary to them. Other men have prestige, influence in making business confidence, by virtue of possession of large wealth. They are, first, in position to lend largely. Their decisions count directly for more than the decisions of thousands of other men. The very fact that they have confidence in the future, apart from anything else, means a tremendous increase in *effective* business confidence—which we are here concerned with. The optimism of a man who can neither buy nor sell nor borrow nor lend, because he himself has no economic resources, and no prestige, is like the desire of a penniless beggar for an economic good—its effect on the market is not great! But further, the fact that a rich man is lending makes possible activities which would not otherwise be

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possible, and so justifies confidence on the part of those who wish to deal with those to whom he lends. Such a man may, on the other hand, borrow. His borrowing, for business activity, justifies confidence on the part of those who would deal with him. Quite apart, therefore, from any influence on the opinions of others growing out of respect for his judgment, or less rational reaction to him, he can do much to make or unmake business confidence. But commonly, also, such a man is a center of prestige, as well as a controller of economic power by virtue of his wealth. Men look to him for their cue. If *he* has confidence enough in the future to risk his great wealth, surely smaller men with smaller interests need not be afraid. Vitally important centres for the making and controlling of business confidence are the banks. Having intimate knowledge of the affairs of many business men, of business men in many different lines, they are in a position to judge wisely of business prospects. Having great power to make or refuse loans, they can encourage or chill the enthusiasm which business men may independently develop. The whispered word of a banker may well count for more than the half-page advertisement of a promoter. But the banker is not all powerful. His influence is much greater, often, in restraining than in evoking business confidence. Bankers may during long periods be quite unable to increase their loans, though they tempt borrowing by easy rates.

Business confidence is a fact of social psychology. It is an organic phenomenon, with radiant points of control. It is a matter of inter-mental activity, rather than a thing in which each man makes an independent choice.

But this is to say nothing of credit phenomena that is not true of all value phenomena. All economic values are social values. The values of wheat or sugar or bicycles are social values. There are centers of power and prestige,

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growing out of the distribution of wealth, or various other social factors, which have a dominating influence on economic values, as a rule. Credit phenomena are merely part and parcel of the general system of economic motivation and control.

In *Social Value* (pp. 102–103) I have denied the doctrine of Meinong and Tarde that explicit belief, existential judgments, are essential to the existence of values, taking value in the generic sense, which includes æsthetic value, religious and patriotic value, legal, moral, and other values. I have pointed out that we do, at times, value ideal objects, the creatures of our imaginations. The dead sweetheart, or the Beatrice that never was (or that never was what she was imagined to be) may have tremendous value. Not merely things hoped for, but things hopelessly gone, as "The Lost Cause" to the Southerner, may be objects of value so high that other things, known to be real, may sink into insignificance beside them. Even in these cases, however, there must be a "reality-*feeling*," an unconscious presumption or assumption that the object valued is real. Indeed, belief, as distinguished from mere ideation, is an emotional "tang," an essentially emotional, rather than intellectual, fact. If it be present, the ideation and explicit judgment may be dispensed with.

It is, however, characteristic of economic values, particularly of the values of instrumental goods and of the goods with which business men make profits, that the tendency to raise the question of reality, to require explicit judgment, is strong. The successful business man is necessarily the man who does this, who does not too highly value the creatures of his imagination, when he imagines a vain thing. One need not, perhaps, seriously raise the question as to the reality of the loaf of bread he buys. Explicit judgment there would be superfluous. But very

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serious questionings come in whenever lands or houses or securities or bills of exchange come in. One needs to know what the facts are, and to make judgments based upon them. Hence, for all values of capital goods and income-bearers, for the values which pass in wholesale and speculative trading in general, the matter of *belief* is vitally important. Here, again, then, we have nothing in the psychological principles underlying credit phenomena to mark them off from the general field of value phenomena.

The general laws of value, then, apply in the case of credit phenomena. We find nothing unique in essence in them. The juridical relations, also, in so far as they have economic significance, shade into one another. To buy a bond from a bondholder is purchase and sale. To pay a borrower money for his personal note is lending. But from the standpoint of the theory of value and prices this distinction may be ignored. We may extend the idea of buying, selling, and price to cover all contracts where values are balanced against values, and expressed in terms of each other. Future money has its price in present money, just as much as present wheat has its price in present money. Really it is not future money against present money. It is a case of *rights*, which involve the payment of money in the future, sold for money, and priced in money. In general, it is *rights*, rather than *things*, which pass in economic exchange. Physical delivery does not constitute selling. Delivering a load of wheat to a railroad does not constitute sale of the wheat to the railroad; selling a farm does not involve any physical moving of the farm. Rights, *in personam* or *in rem*, are objects of economic value, and the exchange of these rights makes up the bulk, if not the whole, of economic exchange. (Exchange may be limited to the transfers of juristic rights, without value being so limited. I have discussed the rela-

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tions of value and exchange in the chapter on "Value," above.) Property rights are commonly conceived of as the proper objects of buying and sale. Contracts involving the future services of free men stand legally on a different footing from contracts regarding physical goods. But economic analysis is not greatly concerned with these distinctions, except in so far as they affect the values of the things exchanged, and so the terms of the exchanges. I do not believe that the legal distinctions can be made to run on all fours with any significant economic distinctions, and shall not undertake to make them do so. In the phenomena we have simply cases of buying and selling (in a generalized sense of those terms) of *rights*, at *prices* (by a very slight extension of the term, price, to which the market is well accustomed). The terms of these exchanges, the prices, are governed by values, social economic values, in no wise different from the values which govern the prices in exchanges which we do not class as credit transactions. I say that credit phenomena are exchanges of rights. This is true of all exchanges. We do not exchange rights for money. We exchange rights to other things for rights to money. The mere physical transfer, even of money, does not give rights to the money. I may merely be giving you the money for safe keeping, or for use for my purposes. While the law makes the rights to money that has left the hands of its owner less lasting, as against innocent third parties, than in the case of other objects, and while the right to money is always, or almost always, met by returning other money of equal amount, even in the case of money it is a right, and not a mere physical transfer, that is significant.

Our problem regarding credit is, then, much simplified. We have simply to pick out certain economic exchanges to which the name of credit transactions has been applied,—

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a various and heterogeneous set of exchanges, in many ways—and study them, to find their peculiarities. These peculiarities will not make them exceptions to the general laws of value. They will make them merely special cases. To find essential principles marking off credit transactions, at large, from non-credit transactions is an exceedingly difficult thing. There are more differences among credit transactions themselves, than there are between the genus, credit transactions, and the class of things not called by that name.

Thus, monthly payments of rent, of wages, of college professors' salaries, are not commonly called credit transactions. The monthly payment of grocery bills, or of telephone bills, involves credit. Where is a real difference to be found? On the other hand, between book credit between grocer and patron on the one hand, and a bank-note or deposit credit on the other, the difference is large, in many practically important ways. Between a call loan and a ten year agricultural mortgage-note, the differences are even greater.

One may be disposed to find the differences between credit transactions and non-credit transactions in the fact that the former stipulate a definite sum of money, due at definite times. This would partly differentiate a bond, say, from a stock. The bond not merely calls for stipulated yearly payments, but also calls for a definite payment at the end. This would, however, exclude British Consols from the list of credit instruments! British Consols differ from safe preferred stocks in legal, rather than in economic, ways. Legally they are alike in that no terminal payment is called for. Practically they are alike in that annual regular sums may be expected. It may at least be said of credit transactions that stipulated money payments, either at a different time or a different *place*, are called for. This

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would include the telegraphic transfers of funds, and would exclude the case where A, a farmer, does a day's work for B, a neighbor, for the promise of a day's work in return at a later season. The latter transaction involves many of the elements that definitions of credit have included, but I think that we may at least limit our conception of credit transactions to transactions within a money economy, where money, as a measure of values, functions in the calculations. Shall we, however, limit credit transactions to cases where a stipulated *amount* of money is named in the contract, for a stipulated time?

Shall we exclude contracts where the payment of money is made contingent on anything? By contingency here I mean legal contingency. This test would exclude the highest grade preferred stock. It would include the shakiest bonds that contained, in the terms of the contract, no contingency. But where, then, would one place such an instrument as the Seaboard Airline Adjustment 5% Bonds, which may default in a given year half of the interest, if it is not earned,[1] and which yet call for the payment of the principal at a stipulated time?

What shall we say of "borrowing and carrying" transactions on the stock exchange? Is not the loan of stocks a real credit transaction? Ordinarily, when stocks are put up as collateral, one thinks of the money as being lent, and the stock merely as a pledge. But in the case of borrowing stocks by a bear to deliver next day, the transaction is definitely thought of as a loan of stock. It is sometimes paid for, the bear paying the bull a premium, instead of receiving interest on the money he has turned over to the bull as a "pledge." The more usual thing, is, of course, for the bull to pay the bear interest. But in a contract

[1] The interest so defaulted is cumulative, like a preferred dividend, for years after 1909. Wall Street speaks of this issue as a "half-bond."

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like this, there are many contingencies. As the stock rises in value, the bear must lend more money to the bull; if the stock falls, the bull must return part of the money to the bear. Both times and amounts are here contingent, even though in the end the amounts lent and repaid balance. Call loans, of course, do not call for payment at a stipulated time, and the same is true of bank-deposits and bank-notes, and of many other forms of credit. Interest on deposits in mutual savings banks is contingent, legally, as to amount. Are insurance policies credit instruments? What of endowment policies?

It is easy to draw legal distinctions in all these cases, but to show that definite and uniform economic consequences flow from these legal distinctions is quite impossible. Rather, it is easily possible to show that uniform or certain economic consequences do not, in general, flow from them.

I shall refrain from the effort to give a general, fundamental definition of credit. I shall rather discuss certain of the more important types of what have been called credit, with a view to seeing what bearing they have on the problems with which this book is concerned; the value of money, and prices. The general class of transactions to which the name, credit transactions, has been applied may be roughly designated as transactions in which the consideration on one side, at least, is the assumption of a debt, running in terms of money (though not necessarily to be paid in actual money), payable either at a future time or at another place. Objections can be found to this definition. It does not meet the fundamental test of a definition that, for the purpose in hand, it should seize upon the essential and unique characteristic of the things marked off. I am not sure that it meets the tests of inclusiveness and exclusiveness even for those transactions which we call credit transactions.

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Thus, if A and B go to the bank together, and A there buys B's horse, standing in front of the bank, giving B in return a check, which B immediately cashes in the same room where the check is drawn, the idea of different time or different place is not realized in any but a technical sense. A, in drawing the check is, of course, assuming a debt. The check, if repudiated by the bank, becomes a note, which A must pay. A, moreover, is paying B, not with money, but with the transfer of a claim on the bank, and the fact that his check, if unpaid, becomes a note is not the main fact about the check. Understanding our definition of credit to cover this case also, however, and attaching no fundamental importance to the definition save as a means of marking off a class of more or less related phenomena which we mean to discuss, the definition will serve.

Thus defined, we have in credit a concept susceptible to quantitative treatment. Debts, in terms of money, can be summed up, and we may have the concept of the "volume of credit" as the sum of such debts at a given time, or through a given period of time, or as an average through a period of time. We may distinguish credit transactions from credit, defining credit as the volume of debts, and credit transactions as transactions in which the debts are passed in exchange. This would be to broaden the notion of credit transactions beyond the usual conception, since it would include transactions in which A sells ("without recourse") B's note to C. It would also include cases where bonds are sold. It would exclude cases where stocks are sold, since they are not legally debts. Some would prefer to limit the notion of credit transaction to transactions in which there remains some contingent responsibility on the part of the one who uses the credit instrument, but this would be to deny the name, credit transaction, to cases where bank-notes or government paper are used in pay-

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ments, as well as to deny it to the case where bonds are sold. It is not important, for my purposes, to draw a sharp line about the concept, credit transaction, however. And about the concept credit itself I have drawn a line resting on a legal, rather than an economic, distinction.

Within the field of credit, thus defined, we may single out for especial consideration certain forms of demand or short time credit, particularly bills of exchange, bank-notes and bank-deposits, and merchants' book-credit. We shall also have something to say regarding long-time credit, including bonds, and mortgage-notes that have no general market.

All these debts in terms of money, to which, in the aggregate, we have given the name, volume of credit, have grown out of *exchanges*. Exchange is here used in a wide sense, and is not confined to the case where goods or services are bought and sold. It is an exchange, if a man gives his note to a banker in return for a deposit credit. But, on the assumption that exchanges are made only when gains are to be realized, it follows that all debts, and so all credit, have been created in view of anticipated gains (or to avert anticipated losses). In a society where everything is in equilibrium, a "static state," where there are no "transitions" to be effected, where there is no occasion for speculation, and where exchanges of lands, etc., are negligible, the volume of all exchanges, including those where debts are passed in exchange, would be small. The occasion for the creation of the debts which make up the volume of credit would not be nearly so numerous as under dynamic conditions. The *volume* of credit, in other words, is largely a function of dynamic conditions, even though credit would exist in a static condition of economic life. The bulk of credit, as the bulk of exchanging, grows out of dynamic conditions, transitional changes, and the like.

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This will be clearer when we raise the question as to *why* debts are created, as to what function debts perform in economic life. Why should a man borrow? Let us suppose that a farmer has 600 acres of land. He wishes to sell 100 acres, and use the proceeds in buying equipment for his farm. But he finds it difficult to sell the 100 acres. There is no ready market. He can sell it immediately only at a great sacrifice. By waiting, and looking industriously for a customer, or by engaging a real estate dealer to do so, he could finally find a buyer, but the thing is slow and uncertain, and he wishes to get the equipment at once. He borrows, therefore, giving his farm as security, or a part of the farm as security. He exchanges a claim on the future income of the farm for present money, and with this he can buy the equipment he needs. The net result has been that the credit transaction has transformed his unmarketable quantum of value into a marketable form of value. He has been able, by an indirect step, to do what he could not do directly—to trade a part of the farm (which in its economic essence is a prospect of future income) for the equipment. In this illustration, *credit has functioned as a means of increasing the marketability or saleability of non-pecuniary forms of wealth.* Credit is primarily a device for effecting exchanges that could not otherwise be effected, or for effecting exchanges more easily than they could otherwise be effected. This means that credit transactions are a part of the productive process, and that they increase values. It is the function of credit to universalize the characteristic of money, high saleability. It is the function of credit to "coin," so to speak, rights to goods on shelves, lands, etc., etc., into liquid rights, bearing the dollar mark, which are much more highly saleable than the rights in their original form were, and which often become as saleable as money itself, functioning perfectly as money.

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Credit thus tends to universalize that characteristic which Menger[1] considers the unique characteristic of money. By means of credit transactions, a man borrows up to 50% of the value of the farm, makes his farm in effect, 50% saleable or fluid. The man who owns livestock may not be able, on a given day, to market them without loss, but he can use their value in the market, up, say, to 75%, by a loan. The man who owns a hundred shares of United States Steel may not be able, at a given time, to market them to his satisfaction—though in the case of articles and stocks dealt in in the speculative markets saleability is very high indeed, and in the case of United States Steel, in particular, the "spread" between "buying price" and "selling price" is very narrow—but he can borrow, with the stock as security, up to 80% of its value. On a bond of the United States government, he may borrow up to 100%.[2] The process of creating credit is a process of transforming rights from unsaleable to saleable form. Often this means the subdivision of rights, preferential rights to a *portion* of the value of a piece of wealth being more saleable, because of greater certainty, than the total right to the whole. Another reason why partial rights may be more saleable is that the value represented by each partial right is smaller. It is easier to market things worth a thousand dollars than things worth fifty thousand, as a rule. In any case, a chief economic function of credit is,—*the* chief function for our purposes—to make fluid and saleable articles of wealth other than money; to universalize the quality of saleability.

This justifies us in our contention made before that *all*

[1] *Supra*, chapter on "Origin of Money."

[2] "It is needless to say that Government bonds always rank as the very highest class of collateral, and the banks require no margin on such security." Pratt, *Work of Wall Street*, 1912 ed., p. 287. This, it need not be said, is not always true!

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corporate securities, whether stocks or bonds,[1] are, in economic nature, alike. Driven to a legal concept for a definition of credit, we were obliged to exclude stocks from our rough definition. But corporate organization does precisely what the various other transactions that we have called credit transactions do. Lands and buildings and machinery, or the roadbed and rolling stock of a railroad, are highly specialized, often unfit for use in any form other than that in which they now appear. As concrete instruments of production, they would be highly unsaleable. In their totality, as a going concern, they are highly unsaleable, because in the aggregate so very valuable. Grouped together, however, but still subdivided, the objects of many thousands of partial rights, represented by stocks and bonds, they become saleable in high degree.

As objects other than money gain in saleability, they tend to gain in value, also. This is not necessarily true, always. If wealth is already in the best place, at the proper time, and in the proper hands, no point is involved in further exchanges. Additional saleability—or an increase in the qualities that make for saleability—could make no difference. But when objects could be employed to greater advantage if in different hands, if, in other words, there is occasion for exchange, then whatever adds to the saleability of a good adds to its value. What would otherwise have gone into the trouble and expense of marketing now is saved. In general, items of wealth tend to gain in value as they gain in saleability—though not in any definite proportion.

Further, as objects of value other than money gain in saleability, money tends to lose its *differential advantage* in

[1] Veblen has elaborated the doctrine that stocks and bonds are much the same. *Cf.* the discussion in Meade's *Corporation Finance* of the relation of junior bonds and preferred stocks in reorganizations.

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this respect, and so tends to lose that part of its value which comes from the money-uses. If all things, including gold, were equally saleable, there would be no *raison d'être* for money, and gold would have only the value that comes from its commodity functions. In so far as credit-arrangements give to partial rights to wealth the capacity to serve as a medium of exchange or for other money purposes—and this is true to a high degree of bank-credit—this tends to cut under the sources of value of money. Credit thus, from two angles, tends to raise prices; it raises the values of goods; and it tends to lower the value of money. The limits on this, however, are reached when gold ceases entirely to function as money, and when all items of value are perfectly saleable. Then credit has done its perfect work for prices, and can do no more. No incentive remains for further borrowing, if all items of value that need to be exchanged are perfectly saleable.

These theses will meet objection, particularly from those who are accustomed to quantity theory reasoning, and who look upon the volume of credit as something independent of the volume of trade. On the logic of the quantity theory there is no reason why prices might not mount indefinitely, if only credit could increase indefinitely. The causes controlling the volume of credit are, on this view, quite independent of the volume of trade. I have given this line of thought sufficient criticism, perhaps, in Part II, but shall find occasion to recur to it at a later point in this chapter. However, writers not bound by quantity theory ideas, may still find reason to question these theses, and it is necessary that I should take account of various complications, and make what may well be called substantial qualifications and modifications, before the theses are acceptable.

First, objection will be offered to the doctrine that all

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credit is merely rights to wealth, that credit rests on wealth. It will be urged that many loans are made without collateral, or mortgage security, that the "personal credit" of the borrower is the only security, and the only basis of the loan. This objection is not serious. There are, doubtless, loans which are disguised benevolences, where the lender gets nothing good in return for his loan. I abstract from such cases. Quantitatively they are not important, and qualitatively they are not really commercial transactions. In general, when a good merchant borrows at the bank on his personal note, the bank knows very well what goods he has in stock, what prospects he has for marketing them, what other debts he has, what his "net worth" is. And the bank knows that it has legal claims, even though not preferred claims, on his wealth. When a young business man borrows capital from a neighbor, giving no security because he has no marketable wealth which would serve as security, he is, none the less, exchanging a valuable right for the loan. He is giving the lender a right to a preferential share in his future income. The lender has considered the young man's abilities as sources of income, in conjunction with the capital lent. Incidentally, the lender retains rights, preferential rights as against the young man himself, in the quantum of value he has turned over to him. If a young man borrows the resources with which he buys a farm, the lender takes a mortgage on the farm itself. Transactions of this sort frequently have in them the element of benevolence, and the considerations are not always strictly commercial. In the case of a young man of unusual ability, however, who insures his life for the benefit of the lender, such transactions may be perfectly good commercial transactions, value balancing value in the exchange. The thing traded is commonly present money (or its equivalent) for rights to future money income.

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Public loans present no exception to our rule. They represent the transfer of present wealth for the future income which the government, by virtue of its public domain, or, more commonly, its taxing power, may expect to receive. With a strong government, this future income may be a very substantial part of the total income of the people. Public loans may often be for commercial purposes, as when municipalities borrow to build or extend municipal enterprises. In cases of this sort, the market frequently will consider the prospects of commercial success of the enterprises in fixing the value of the municipal bonds. Where the proceeds of the loan are for non-commercial purposes, as war, the question of the future income of the government will still, ordinarily, be a dominant factor in determining the value of the securities. Often, however, there is the direct action of patriotic fervor, etc., enhancing the values of government securities. We have seen this in the case of government money. It is no part of our theory to maintain that men's calculations are always rational, or that the whole of the value of a long-time income-bearer rests on the anticipated income. But this is no peculiarity of credit phenomena. The same thing is true of lands, for example. Capital values often get independent in part of their "presuppositions," as we have seen in the chapter, *supra*, on "Economic Value." War security issues often represent the effort of the government—as at the present time—to bring into the present every possible bit of future values, as a means of increasing their power in a desperate struggle. The high prices of goods in such a situation represent the concentration of future values into the present, an increase in the motivating power which stimulates the people to unwonted exertions. In war time, moreover, many *ideal* values,—those whose fate is dependent on the outcome of the war—enter into and increase the

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values of those goods which are needed for carrying on the war. This leads to larger sacrifices of future income than would ordinarily be tolerated. It is not so much a case of present goods rising because of extra credit, as of extra credit because present goods are more valuable.

A second objection would be raised that in many cases, the values pledged by the borrower could not exist if the lender did not make the loan. This would be particularly the case with credit granted for the starting of a new or novel enterprise, which as yet exists only in idea. The established merchant, with goods on his shelves, or with a bill of lading for goods which he has sold, has a very tangible, concrete basis for a loan, whose value is independent of the decision of any given banker. If my doctrine is to be taken as holding that all credit rests on concrete physical goods, very many exceptions indeed could be found. But this is not my doctrine. It is that credit rests on valuable *rights*. These rights may be rights to existing concrete goods; they may be rights to future incomes. In any case, it is the values, rather than the physical quantities, that are significant. Witness cotton before and after the outbreak of the World War. Ultimately, in general,[1] economic values come from the "primary values" or "first order" values of consumption goods and services. These values are reflected back, by the imputation processes, to the various "factors of production" which have made the existence of the goods and services possible, in accordance with well-known laws which need not be here elaborated. But the category of "factors of production" is

[1] I do not accept the imputation theory, or the capitalization theory, without qualification, except as static first approximations. Values of "factors of production" may easily become, and do become, in large part independent of their "presuppositions," *Cf.* the chapter on "Dodo-Bones", *supra*, and the chapter on "Economic Value."

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far from exhausted when we have named land, labor, and produced instruments of production! Some writers have rejected the notion of "factors of production" largely or altogether, and prefer such a term as "agents of acquisition." [1] I certainly have no intention to give to the term, factor of production, any ethical connotation. Even though a factor of production be, like land or labor, a *sine qua non* of production, it does not follow that the owner of that factor gets his proper, or ethically just share, under the laws of economic imputation. Many of the "factors of production," in the sense of factor which derives a value from the economic laws of imputation, may well be parasitic from the angle of ultimate social welfare. The only test is as to whether, under existing social arrangements, a portion of the income *of a given establishment* would cease to exist if that factor should disappear, or be reduced. From the angle of this test, monopoly power, trade-marks, established trade connections, the big idea of an entrepreneur, a dynamic personality, capacity for winning other men's confidence and good will, and sometimes that brutal selfishness which makes other men shrink from conflict, or the reputation of being a dangerous and vindictive man, may be equally "factors of production" with land, labor, and produced instruments of production. In Part IV of this book, "The Reconciliation of Statics and Dynamics," we have discussed the "intangible capital items" of this class, and have indicated that many of them perform really important and necessary social functions. Others are doubtless pernicious. Production involves leadership, organization, the making and maintaining of "interstitial connections," as well as the technology of muscle and machine. But credit is based on values, rather than on

[1] This would seem to be Davenport's view. See his article in the *Quarterly Journal of Economics*, Nov. 1910.

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concrete goods as such, and if these "intangibles" have value, they may have credits based upon them.[1]

That some of these values exist only by virtue of the fact that credit is granted is no marked peculiarity. The granting of credit is an exchange of the rights of the creditor for rights to the future income of the borrower. If the exchange were not made, in certain cases, the borrower would have no future income to which he could give rights. The entrepreneur with a big idea cannot actualize that big idea unless he can bring it into conjunction with land, labor, capital, and a market for the products. The exchange of rights to the value of the products for the banker's deposit-currency, or the private lender's money is merely one of many necessary exchanges required to bring about the combination which will create the products. If there were no possibility of marketing the products, he would be equally helpless, and his idea be equally valueless. The general range of values, under our present system of division of labor, private property, private enterprise, etc., depend on the possibility of exchange. Men produce for the market, rather than for their own consumption, or for the consumption of a communist society. Without exchange, many values would persist, but most values would at least be diminished. Exchange is part of the productive process. The only peculiarity in the case under discussion is that the man getting credit for the exploitation of a big new idea commonly has a very limited market—is dependent on the decision of one bank or lender, or at most of one out of a few possibilities. The narrower the market, the more dependent are the values of things that must be exchanged upon the decisions of a few men. Wheat is free, virtually, from individual caprices, though even there a big operator may organize a pool and temporarily affect

[1] To a high degree, "good will," trade-marks, etc., are bankable assets.

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the value very greatly. But the immediate power of a few men on values is increasingly great as we get closer to those things which are unique, which are capable of only specialized employment, and which call for the coöperation of elaborate and expensive systems. And, of course, the influence of individual caprice, or individual decisions, on all values grows greater as wealth and power are concentrated. Economic social value is an institutional value, specially weighted and controlled by individuals, classes and institutions.[1]

Joseph Schumpeter, in his *Theorie der wirtschaftlichen Entwicklung*, has made much of the rôle of the banker in economic evolution. He sees in the banker a creator of "*Kaufkraft*," by means of which an entrepreneur, a dynamic man who has a new idea which he wishes to actualize, is able to wrest from the unwilling "static economic subjects" their land, labor and instrumental goods for the purpose of putting his new plan through. This new *Kaufkraft* is the true *Kapital* which the new enterprise requires. Capital, thus defined, is not an accumulation of goods, is not embodied in goods. It is an *agent*, a *power*, which the banker creates. It makes dynamic change possible. Schumpeter is particularly anxious, in clearing the way for his new theory of interest, to get rid of all the notions of saving, accumulations of stocks of goods, etc., which have commonly been made prominent in the discussion of capital and interest. We need not here discuss his theory of interest.[2]

[1] *Social Value*, 1911, *passim*, especially ch. XIII. Cooley, C. H., "Institutional Character of Pecuniary Valuation," *Am. Jour. of Sociology*, Jan. 1913.

[2] *Cf.* my article, "Schumpeter's Dynamic Economics," *Political Science Quarterly*, Dec. 1915, and the chapter on "Marginal Utility," *supra*. That the new bank-credit, without the painful *preliminary* "abstinence" which the classical economics has stressed, is enough to provide capital for a new enterprise is, as Schumpeter insists, true. Schumpeter has made an important contribution in his emphasis on this too much neglected point. But

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He maintains that the new dynamic credit, credit granted by a banker for a really new enterprise, as yet not concretely in existence, represents something new in the world, anomolous from the angle of static values, and static credit. Indeed, he regards credit as unessential for the static analysis, and banishes it from the "*Wesen*" of his static state. But this new credit is different from such credit as there may be in the static state, because, he holds, the new credit does not rest on goods, and has no *Deckung*. Schumpeter himself calls these doctrines "heresies." They become less dangerous, however, when we learn that by "saving" Schumpeter means mere trenching upon accustomed expenditure, so that the entrepreneur who saves part of unusual profits is really not saving at all, and when one discovers that his contention that there need be no accumulation of goods prior to the starting of a new enterprise means merely that there need be no special accumulation of goods *ad hoc*. Of course if saving means trenching upon accustomed expenditure, it is banished by hypothesis from the static state, but there may still be plenty of capital (in the ordinary sense of accumulated produced means of production) for Schumpeter's entrepreneur to get hold of by means of his new *Kapital*. His contentions that the new credit does not rest on goods, that it has no *Deckung*, and that we have a new thing in the world since in dynamic credit we have a case of temporal discrepancy between the

it should be noted that this does not dispense with curtailing of consumption, and "abstinence." It merely shifts the necessity for curtailing consumption to some one else. The new plan of the dynamic entrepreneur, by means of bank credit, draws labor and capital away from the existing static enterprises. That curtails their output. That leaves less goods of the old kinds for people to consume. That means higher prices for consumption goods, in the interval between the starting of the new enterprise and the time when its finished products are added to the "real income" of the community. Extensions of bank credit, there, shift the burden of "abstinence" to the consumer, and to the static producer. "Saving" is still the source of capital, but it is involuntary saving.

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making of obligations and the ability to pay them, calls for further analysis.

It is true that there is a time during which the new credit has no basis in concrete goods. Very speedily, however, the new credit is exchanged for concrete goods, and the enterprise is started. Further, the banker commonly insists on a margin at the start. Further, the claims of the borrower on the banker are themselves, prior to their expenditure for the things needed in the enterprise, assets to which the banker may look as a basis for his confidence in the goodness of the entrepreneur's promise to pay him. There is never a moment when the new credit does not rest on *values*. The loan by the banker to the borrower is, essentially, like the case of the purchase of any bearer of future incomes, say a machine, or a factory. The machine is, after all, in economic nature, merely a "promise" of future goods and future values, as an Austrian economist should be quick to recognize, and machines are almost as frequently poor performers as borrowers—indeed, most commonly, the borrower's inability to repay comes from the failure in the value of the goods which his physical equipment produces. The *raison d'être* of the new credit is the new values which have come into existence: the new plan of the entrepreneur, *validated by the banker*, attains a value equal to the present worth of the extra products which it promises. I repeat that it is values which are significant as the basis of loans, that values are not all embodied in physical goods, and that value is essentially a psychological thing.

The banker's validation of the plan may be an essential factor in its value. *Belief* is often an essential factor in values. The new value, and the new credit, have a large element of belief in them. The value of the new plan rests proximately in the belief of the banker, manifested by his

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granting of credit. But the value of the *bank-credit* rests ultimately in the *prestige* of the banker, which is a fact of social psychology, resting in a massing of belief on the part of the public in him, in the validity of his bank-notes and deposit-currency, coupled with support from legal and other institutions. But this is to anticipate the discussion of the nature of bank-credit. The point involved is sufficiently illustrated by the case where a man who is not a banker lends his money to an entrepreneur of a new undertaking. Here again the enterprise is impossible without the loan. Here the loan is made on the basis of an anticipated income. Here again the anticipated income is made possible only by the loan; one of the values that enters into the exchange exists only because the exchange is possible. None the less, the credit rests on value. It is a right to an anticipated income. The man who has made the loan has his security in the value which he has lent, plus the present worth of the extra income which the new idea is expected to create.

Now a great practical difference is made in the course of economic life by the decisions of lenders to lend to men who plan new things, instead of to men who plan old things. It makes an enormous difference whether or not new plans appeal to the imaginations of those who control the economic resources of society. It makes a great difference whether static values (the capital values of incomes to be created in familiar ways) or dynamic values (capital values of incomes to be created in novel ways) win out in the competition for loans from those who have loans to make. But *as values*, the two are of the same psychological stuff and substance: futurity and belief are essential elements in both of them.

Stable belief, and strong belief, are easier to evoke in the case of the established and the familiar. New ways of

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creating wealth must promise larger returns, and make more dramatic appeals to the imagination, than old ways. Schumpeter indicates that it is the essential function of the banker to give preference to the new ways, that the mass of men are "static" in their attitude, and that, for some reason which he does not clearly indicate, the banker is not. This has not been our American experience, on the whole. The contrast which Schumpeter makes between the timid, static masses, and the few highly important dynamic entrepreneurs, holds very much less true in America than in Continental Europe. There it is doubtless true that new industrial enterprises have had their main encouragement from bankers. Here, such enterprises have appealed largely to the mass of men, to the investing and speculative public. Our commercial banks have lent largely upon stock exchange collateral, which means that, indirectly, bank-loans have gone to finance industry. The extent of this is enormous, as will later appear. However, the banks, as banks, have not been large *buyers* of stocks. They have guarded themselves by requiring "margins" from those to whom they have lent on such collateral. Seasoned bonds have been bought in great volume by our commercial banks, but few stocks. Even the underwriters and investment bankers have been primarily intermediaries, expecting to pass on to private buyers the securities they hold temporarily. My point here is, merely, that there is nothing in the distinction between static and dynamic credit, when by that is meant the distinction between credit for new enterprises and credit for old enterprises, to mark off a peculiar or essential province for bank-credit. The need for bank-credit does arise out of dynamic conditions, primarily, but it is not the need for credit to *start* dynamic changes, even though bank-credit may do, and does do, that. The chief reason for bank-

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credit is to enable economic society to readjust itself quickly and readily to dynamic changes, by putting through without friction the necessary exchanges that such readjustment requires, and by holding in liquid form a fund of rights which can meet the emergencies and unexpected occurrences which dynamic conditions involve. To this we now turn.

Bank-credit is the debt of responsible institutions, payable on demand in money. It may take the form of notes, or of the right to draw checks. Long evolution has begot a system of legal relationships, and of banking technique which makes these promises easily performed. The same process of development has led to social reactions toward banks and bankers which give them enormous prestige. Legal regulation, in the case of many banks, requiring adequate capital, and, in this country, requiring minimum cash reserves, have added to that prestige. The promise of the bank is commonly so liquid and saleable that the banks are not called upon to fulfill it by the actual payment of money—the promise alone is an object of value which is perfectly saleable, which runs in terms of money, and which functions as a perfect substitute for money in almost every use except for very small retail transactions. Even there, it is very much used.

Among the features of banking technique to which we must give especial attention are the following: (1) the banker has substantial resources of his own, his "capital," which constitutes the "margin" of protection which he offers to those who give him valuable things in return for his promises to pay money on demand; (2) the banker exchanges his promises to pay on demand, as far as possible, for those things which have a high degree of "liquidity," *i. e.*, for those things which he can quickly dispose of for cash, or for the promises of other bankers which are the

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equivalent of cash. Farm mortgages are not good assets for a banker to hold in large amount. They are long-term obligations, with a very limited market, and they will not help him in emergencies to meet his obligations to pay on demand. Agricultural loans, and other mortgage loans are made in considerable volume by our State banks and trust companies. All classes of commercial banks make many non-liquid loans, as we shall later see. But all of them get as high a proportion of liquid loans as they can. Bills of exchange, running ten, thirty, sixty or ninety days, growing out of commercial transactions which automatically terminate themselves in the payment of cash or the promises of other bankers, constitute admirable assets. In return for these, the banker may give his promises freely. This is especially true where there is, in the banking practice, a wide "rediscount market," in which he can sell these bills before maturity if he wishes to get even more liquid assets. Promissory notes, for short periods, thirty, sixty, or ninety days, growing again out of commercial transactions, which, like those for which the bills of exchange were drawn, automatically bring in cash or the promises of other banks, are in many respects like the bills of exchange, even though the rediscount market for such notes has not been so highly developed as the market for bills of exchange in Europe. Whether such notes are as available for rediscount as bills of exchange is a question of technical banking which we need not here discuss in detail, though I venture the opinion that bills of exchange are superior decidedly for this purpose, especially "documentary" bills. The element of personal credit is commonly larger in the promissory note, and that limits the market. Banking organization, and particularly our new Federal Reserve System, may greatly reduce the disadvantages of the promissory note from this angle, but it seems not

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unlikely that the bill of exchange may be a factor of increasing importance in our internal banking arrangements. The general test, however, of what is available for a banker's assets depends on varying conditions, and is not to be answered by a simple formula. A bank in a rural region which loads up heavily with the safest local bonds is little better off than with farm mortgages. For neither is there a quick market in an emergency. A city bank, near the stock exchange, may very safely buy in large amounts highly saleable as a profitable substitute for part of its cash reserve. Even country banks may, and do, safely own such bonds. Short loans on stock and bond security, constitute the most important single type of bank-loan in the United States, as we shall later see. (3) The third feature of banking technique to which attention must be given is the reserve policy. The banker must keep some actual money on hand (how much we have in part considered in Part II, and shall again discuss).

I shall give attention to these points in what follows. The first point needs little discussion. Large "capital" for a bank gives prestige and security. Some capital is a *sine qua non* for a bank which expects its notes or deposit currency to have general acceptability.

It will be well to consider further the circumstances determining the form which a bank's assets shall take. Though commercial banks own enormous quantities of high grade bonds, it is rare for commercial banks in America to buy stocks of corporations.[1] They will often lend to owners of such stocks with the stocks as collateral, up to a high percentage of the value of the stocks, but they will rarely trade their demand obligations for the stocks directly. In

[1] In 1912, the First National Bank of New York owned 43 millions of bonds, but no stocks. Report of Pujo Committee, Feb. 28, 1913, p. 66. The National City Bank had 33 millions in bonds, but no stocks. *Ibid.*, p. 72. State banks own few stocks; trust companies own a good many.

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general, a bank wishes to have its assets in the form of obligations of other people, expressed in terms of dollars, and having a definite term to run (or callable on demand). One reason for this is a bookkeeping reason. "Par value" of stocks has little meaning any more. Market-prices of stocks, even the best stocks, are not absolutely fixed. They fluctuate, even though within narrow limits. This fact presents complications to the bookkeeper! Of course, the bank's buildings and fixtures, listed among its assets, fluctuate also, in value, and in the price that could be obtained on a given day, but the bookkeeper can abstract from that, since the bank has no intention of selling its buildings and fixtures. The notes and bills held in the bank's portfolios also in fact fluctuate in value, and in the price at which they might be sold on a given day, but they are expressed in terms of dollars, and the bookkeeper commonly has no need to look beyond the figures written on them. At irregular intervals, a small percentage of them may be marked off the books as "bad," but usually the minor fluctuations are abstracted from. The bank does not like to have assets whose published prices fluctuate. But this is, I suppose, not the main objection which banks have to stocks as assets since it does not prevent their buying bonds. I abstract from the legal restrictions that prevent many banks from buying stocks. The fundamental reason is to be found elsewhere. The point is to be found here: the transaction whereby property rights in roadbed, rolling stock, etc., were collected into property rights in a going, organic whole increased the saleability of all these rights; the further subdivision of these rights into many thousands of equal parts enormously increased the saleability of these rights, especially when coupled with listing in an organized market; the further transaction, by which a preferential claim upon these subdivisions of rights is embodied in a collateral note

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still further increases the saleability of the value of these rights. The whole of the value embodied in a share of stock has not the certainty and saleability which a banker wishes for his assets. It might not be possible to market the stock on a given day without loss. But a collateral note, embodying 80% of that value, with provision for additional collateral in case the margin is reduced, is highly liquid and the banker has no doubt that, with watchfulness, he can always realize the full face value of such a note. It becomes saleable enough for his purposes. The transaction by which this note is exchanged for the banker's demand obligation gives the drawer of the collateral note a perfectly saleable form of value with an almost universal market, which he can convert without loss into practically anything that money can buy. We have here a series, a scale, saleability of rights growing steadily greater, through a series of transformations and exchanges, till at last the virtually perfect saleability is reached. Again we are reminded of Menger's analysis [1] of the methods of primitive barter, whereby the man who possesses a good of low saleability, through successive exchanges, gradually gets goods of higher and higher saleability, until he finally reaches his goal. Bank-credit, this most highly saleable of all forms of rights except the rights to actual money in hand, and in general not inferior to money, cannot usually be had by direct offer to the bank of crude property rights. These must be refined and distilled, till a central core of highly saleable value emerges, and then they may enter the bank's assets in return for bank-credit. The best bonds likewise offer such a central core of highly saleable value.

A further point is to be noticed about this scale of saleabilities. At each stage of the exchanges of less saleable for more saleable rights, the holder of the less saleable

[1] *Cf.* the chapter on "The Origin of Money," *supra.*

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rights must make concessions to the holder of the more saleable rights. And the degree of his concession is, in general, correlated with the lack of saleability of what he offers. Commonly this takes the form of giving up a right which has a higher yield for one which has a lower yield. Or, viewed more fundamentally, from the angle of the capitalization theory, income-bearers of low saleability are capitalized at a higher discount rate than income-bearers of higher saleability, with the same yield. Farm lands may be capitalized on a 10% basis. (There will be great differences between regions in this, depending in considerable measure, often, on the activity of farm sales. I would refer here to the facts mentioned in my chapter on "The Quantity Theory and International Gold Movements," contrasting Cass Co., Iowa, with Yazoo Co., Mississippi. Of course, the risks of agriculture count heavily, also, and the prestige of owning land as compared with other forms of property.) The farmer's mortgage note may bear 7%. A merchant who holds that note may use it as collateral, with a margin, backing his own note, and get accommodation for three months at 6%. The bank may rediscount the note of the merchant, giving it its own endorsement, on a 4½% basis. The coal mine owned by a small company may yield 12%; sold to a large iron company, which combines mining and smelting and manufacturing, that mine may be represented by 7% stock; a collateral loan, for sixty days, based on 80% of the value of the stock may be had for 4%; the demand liability of the bank given in exchange for the collateral note will either yield nothing at all, or else yield a low per cent, one, one and a half, or 2%, on large checking accounts. If the collateral note be a call note, the rate will be lower, in general, than on a time note. I here refer to what was said in the chapter on the functions of money with reference to the relation of short loans, es-

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pecially call loans, to the "bearer of options" function of money. Part of the yields of these loans is in the bearing of options. This function grows out of the uncertainties of a dynamic market. It would disappear if uncertainties, "friction," and dangers disappeared.

The importance of liquidity and saleability in the assets of a banker needs little discussion. It has been reiterated by virtually every writer on the subject. Its connection with the need for meeting demand obligations is obvious. The point that I would here emphasize is, however, that this, too, grows out of dynamic changes, uncertainties, etc. An economic life in "normal equilibrium," in static balance, with all things going smoothly, in anticipated ways, could dispense in large measure, or wholly, with such liquidity. Obligations which matured at the time that the holders of the obligations had maturing obligations, would serve their purpose perfectly. Again I would emphasize the fact that the theory of money and bank-credit is essentially a dynamic theory, and that the notion of "normal equilibrium" which underlies the quantity theory has no bearing whatever on these fundamental matters.

The market where fluid bank-credit is exchanged for less fluid rights has been given the name, "the money market." The prices fixed in this market are "money-rates," figured as percentages on the amounts of bank-credit exchanged for the less fluid rights. It is, of course, strictly speaking, not a money market. Money, as the term has been used in this book, has been taken to mean gold coin, subsidiary coin, government paper, and for the United States, bank-notes. In a country where much bank-credit is elastic bank-notes, it is better to distinguish money from bank-notes. The term, money, is not one easily defined in a logical manner. A good logical definition should seize on some essential characteristic of the object defined, should in-

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clude all the objects of that class, and should exclude all others. We can meet the tests of inclusiveness and exclusiveness in a definition of money, but we can hardly meet the first test. The differences between gold money, for example, and gold bullion are less than the differences between gold money and government paper. The differences between bank-notes and bank-deposits are less than the differences between bank-notes and government paper, or bank-notes and gold. The term, money, covers a group of more or less miscellaneous things, concerning all of which few general laws are possible. Gold, or other standard money, in particular, may obey different laws from other forms of money. I have been careful, in the foregoing, to avoid the danger of letting the argument rest on any ambiguity in the meaning of the term, however, and for the present shall not attempt further definition. For the present, we shall use the term, "money market," in its familiar sense, as meaning that market in which bank-credit is exchanged for less fluid rights. An organized money market commonly appears only in larger cities. In smaller places, relationships between banks and customers are much more personal, and indeed, even in larger cities, regular business houses have particularly intimate relations with special banks. A fluid, impersonal market, to which men may repair without reference to anything but the marketability of the collateral they have to offer, is a distinctively metropolitan affair. Only large dealers commonly have relations with more than one or two banks. Larger houses in the big cities often do sell their "commercial paper" through brokers, and some of the big New York mercantile houses have had their paper scattered a good deal throughout the country. The lack of protection which houses which sought such credit faced during the Panic of 1907 tended to check the practice in some measure, but it has revived, and

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even increased.[1] In the matter of a wide market for commercial paper, however, an impersonal market, with great fluidity, we are well behind not only England, but also Continental Europe. The London acceptance house has especially contributed to an impersonal market. The American money market is *par excellence* a New York market, and the primary type of paper discounted in the American money market is stock exchange paper, and foreign bills of exchange. For commercial paper, however, there are innumerable more personal, more restricted, markets, and commercial paper constitutes a very considerable part of banking assets, though much less than is often supposed. But this we shall discuss in the next chapter.

[1] In March, 1916, one of the largest banking houses in Boston informed the writer that over one-fourth of its notes and discounts (including all forms of loans) had been bought through note-brokers.

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CHAPTER XXIV

CREDIT—BANK ASSETS AND BANK RESERVES

In traditional discussions of banking, the impression is given that commercial paper is the normal and dominant type of banking assets.[1] To one accustomed to this view, the figures of the Comptroller of the Currency for banking investments in the United States for 22,491 banks of all kinds (State, national, private, and savings banks, and trust companies) in 1909,[2] will occasion dismay:

	(000,000 omitted)
Loans on real estate	$ 2,505
Loans on other collateral security	3,975
Other loans and discounts	4,821
Overdrafts	69
United States bonds	792
State, county and municipal bonds	1,091
Railroad bonds and stocks	1,560
Bonds of other public service corporations	466
Other stocks, bonds, etc.	703
Due from other banks and bankers	2,562
Real estate, furniture, etc.	544
Checks and other cash items	437
Cash on hand	1,452
Other resources	111
Total Resources	$21,095

These figures, however, call for further analysis. They include figures from institutions which should not be counted with commercial banks. The percentage of real

[1] *Cf., e. g.*, pp. 135ff. of Scott's excellent *Money and Banking*, Rev. ed., New York, 1910.

[2] The year 1909 is chosen, in order that comparison may be more readily made with the figures of Dean Kinley's investigations based on reported deposits made on March 16 of that year. The figures quoted are taken from p. 39 of the Report of the Comptroller for 1913.

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estate loans, especially, is too high to represent the workings of commercial banks, a very high percentage of real estate loans being held by stock and mutual savings banks. The other items, however, are not much changed by the inclusion of savings banks and private banks. It will be well to draw some conclusions from these aggregate figures for all classes of institutions, before taking up a more detailed analysis of State and national banks, and trust companies.

Where, among these items, does one find "commercial paper"? In the reports of the metropolitan papers, giving daily variations in interest rates, it is usual to find "commercial paper" listed as a separate category, coördinate with "sixty day paper," "ninety day paper," etc. Recent periodical discussion has gone elaborately into the question as to what should be called "commercial paper," from the standpoint of the policy of the Federal Reserve Banks. I think it safe to say that no two markets, at present, in the United States will use the term in precisely the same way, and that all would restrict the term to a small portion of the "other loans and discounts" listed above. The most general definition of "commercial paper" would be paper bought through note-brokers. Despite the decided increase in loans and discounts which our war prosperity has involved, there has been very frequent complaint of the scarcity of "commercial paper." I shall use the term, "commercial paper" in a much more liberal sense than the American money market does, and shall mean by it all loans of a really liquid character, made by banks to merchants and others to pay for the purchase of goods in anticipation of a resale within the term of the loan which will enable the loan to be repaid at maturity. From this should be excluded, however, loans made to speculators. With this liberal, and not very precise, definition of com-

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mercial paper, we raise again the question as to where it may be found in the items above given.

Virtually all of it, I think, must be found in the item, "other loans and discounts"—an item which, in all, is slightly less than 23% of total banking assets.[1] But not all of this "other loans and discounts" is commercial paper. Very much indeed represents loans of a non-liquid character, regularly renewed, which manufacturers and others have put, not into moveable goods, but into fixed forms of capital-goods, as machinery, and even buildings. One case in New York, which the writer is informed by a business man well acquainted with both banking and business in many sections of the country is typical of many cases, is as follows: a New York bank is at present lending to a small manufacturer of automobile supplies about $30,000. Of this, about $10,000 is liquid, periodically covered by "bills receivable," and if the bills receivable should fail, in the period in question, to cover the $10,000, the bank would insist on a reduction of the loan. The remaining $20,000, however, is not liquid. It was spent for non-moveable equipment; the bank expects to renew the notes for this loan periodically, and is well aware that it could not force collection without bringing the business to a close—or else forcing the factory to get accommodation elsewhere. The $10,000 that is liquid is by no means all spent for goods, but is spent, in part, for wages. *None* of the $10,000 is spent for goods which are to be resold without being transformed by manufacture. None of the $30,000, therefore, is, in the strict sense, "commercial paper." It is manufacturer's paper. Part of it is virtually as liquid as commercial paper; two-thirds of it is not liquid.

[1] Even excluding the item "due from other banks and bankers," as representing duplications, the item "other loans and discounts" remains approximately only one-fourth of total banking assets.

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A very large part indeed of bank-loans are of this character. A large part of the loans made to farmers are in no sense liquid: when the loan is made, for, say, six months,[1] it is perfectly understood by both bank and borrower that a renewal will be asked for and granted. It is impossible to say what fraction of this $4,821,000,000 of "other loans and discounts" is really liquid commercial paper, or liquid paper of any kind, in the sense that it can be automatically paid off at maturity. I venture the statement with entire confidence, however, that the proportion of liquid paper is not one-half of the amount. I should question if more than one-fourth of it is truly liquid, in the sense in which that term is commonly used: meaning that the loan is made to put through a transaction which will be completed during the term of the loan, and permit the loan automatically to be paid off. I do not mean by this merely that the banks could not reduce this item by one-fourth suddenly. Even in a market made up wholly of highly liquid paper, an arbitrary refusal to renew one-fourth of the loans, with the effort to reduce loans and discounts by one-fourth, would occasion great embarrassment and even disaster. The test of liquidity here applied relates to the items separately, on the assumption that other things are not radically changed. Even in this sense, however, viewing each loan transaction separately, it may well be questioned if the banks in the United States could find among their "other loans and discounts" items exceeding a fourth of the total (in value) which they could refuse to renew, at least in large part, without disappointing reasonable expectations, and embarrassing good business men.[2]

[1] Almost all agricultural processes require more than six months from their inception to the marketing of the product.

[2] This view would seem to correspond with the view of Babson and May (*Commercial Paper*, 1912), and of W. A. Scott ("Investment vs. Commercial Banking," *Proceedings of Investment Bankers' Association of America*,

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Of this paper, not truly liquid, no doubt a good deal is advanced to wholesale and retail merchants, and is, in this sense, commercial paper. The terms, "liquid paper" and "commercial paper" by no means run on all fours! As will later appear, the bulk of liquid banking assets are not commercial paper at all. And only that part of a bank's loans to a merchant may be called "liquid" which can be paid off by the merchant without disappointing his reasonable expectations,—causing him to seek other banking connections.

There is, however, another item in which we may find some commercial paper, and this is the item, "loans on other collateral security." This has commonly been supposed to be virtually all stock exchange loans. Thus, Conant [1] cites the growth in this item in New York as evidence of the growth of loans on stocks and bonds. For New York, loans on stocks and bonds do make up the great bulk of this item. Even in New York, however, there are other factors in it, absolutely, even though not relatively, important, and in the country outside, the other elements are not at all negligible, even though for the outside country the part secured by stocks and bonds is the major part, and even though the growth of this item in our total banking assets is, in general, fairly indicative of the growth of loans secured by stocks and bonds. Figures for the other items are not available for State banks, trust companies or savings and private banks. They are not till very recently available for national banks. In 1915,[2] however, the Comptroller separates the item, "loans on other collateral

1913, pp. 81–84). Both of these discussions appear in Moulton, *Money and Banking*, Pt. II, pp. 70 and 75–77. Dr. J. E. Pope considers the view correct. On the other hand, Professor O. M. W. Sprague thinks the "other loans and discounts" of large city banks are more liquid than my statement would indicate.

[1] *Principles of Money and Banking*, II, p. 52.

[2] *Report of the Comptroller of the Currency*, vol. II, pp. 145 *et seq.*

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security," for national banks, into two parts, (1) loans "secured by stocks and bonds" ($1,750,597,273), and (2) loans "secured by other personal securities, including merchandise, warehouse receipts, etc." ($882,749,812). Is there any commercial paper in this last, not inconsiderable, item?

Let us locate the item, in the effort to find out. The percentage runs highest in Chicago, where this class of collateral loan exceeds the loans on stocks and bonds. The inference is strongly suggested, therefore, that much of it, there, at least, represents advances to live-stock, grain and produce traders and speculators on the Board of Trade, at the stock yards, etc. The inference is strengthened by the fact that St. Louis, where there is a good deal of grain and commodity speculation, shows more than twice as much of this kind of paper as does Boston, where this kind of speculation is unimportant—despite the fact that Boston's aggregate collateral loans of all kinds greatly exceed such loans in St. Louis. In New York, where there is a great deal of coffee and cotton speculation, and some other commodity speculation, the amount of this paper, though relatively small, is absolutely greater than in any other city. No doubt, in New York, which is the country's centre for foreign commerce, a fair amount of the paper secured by "other personal securities, including merchandise, warehouse receipts, etc.," is really commercial paper, representing advances to importers and exporters—though the difficulties of giving this kind of security where goods are in transit would prevent most of our foreign trade being financed in this manner. The total of this kind of paper in New York—all these figures are for national banks alone—was only 113 millions on June 23, 1915.[1] It may be doubted if very much of this

[1] Total collateral loans in New York City on that date were $719,327,596. This is for national banks alone. *Report of Comptroller*, 1915, II, 144. There

paper, in the great cities, represents goods in transit. With the caution that the view here expressed is based on inference, and not on actual knowledge of what the large city banks are doing, the writer concludes that probably the bulk of this paper, in large cities, represents loans to speculators rather than to merchants. It is liquid, but it is not commercial paper.

What of such paper in the country districts? Nearly one-half—$436,000,000 out of $882,000,000—of these national bank-loans on "other personal security, including merchandise, warehouse receipts, etc.," are in the country, outside the Reserve and Central Reserve Cities. Much of it is in the South. Much of it in the grain and live-stock producing regions. What do such loans mean? [1] Much of it is loans to farmers and planters. In the South, much of it is on crop liens. The loans on cotton warehouse receipts, at least in the country parts of the South, are not as great as is commonly supposed. In the North and West, there are a great mass of farmers' chattel mortgage loans, including loans on horses, grain in cribs, hogs, sheep, cattle, mules, etc. The use of this type of paper for financing the breeding and feeding of live-stock, particularly hogs, cattle and sheep, is very extensive. Virtually all loans to farmers and feeders for these purposes are secured by such chattel mortgages. It seems improbable that a great deal of this paper could represent ordinary commerce. Neither wholesalers nor retailers can easily handle merchandise on which chattel mortgages have been given. The usual method of granting credit to them is to advance loans on one and

is every reason to suppose that if trust companies and private banks were included, the *proportion* of stock exchange collateral loans would be very much higher.

[1] I am very fortunate in having the views of Dr. J. E. Pope on this question. I know no one whose knowledge of agricultural credit, whether of American or of European conditions, is so thorough and extensive.

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two name paper, unsecured. Not many loans to retailers and wholesalers will fall in the category under discussion.

To what extent are the loans of this type to farmers liquid? Well, the crop lien loans in the South have a natural term, and, though commonly longer loans than bankers have in mind when speaking of liquid paper, are liquid in the sense that they are automatically paid off at maturity. Loans on work-animals need not have a natural term. Loans on animals being fed for the market have such a natural term, and are truly liquid. Loans, however, on breeding animals are not thus liquid, such loans are commonly regularly renewed at maturity, and the banks do not count on them in emergencies. It is the opinion of Dr. J. E. Pope that fully two-thirds of the aggregate loans on live-stock chattel mortgage security are to breeders rather than to feeders, and hence are not liquid. Of course, none of these loans are commercial paper.

I conclude, therefore, that the thesis with which we started that the overwhelming bulk of commercial paper is to be found in the item, "other loans and discounts" is correct. I see no reason to suppose that an analysis of the loans of State banks and trust companies would show a different conclusion. We lack the figures for breaking up the collateral loans of State banks and trust companies into the two classes, "secured by stocks and bonds" and "secured by other personal securities, including warehouse receipts, merchandise, etc." We have merely the gross figures for collateral loans. As the State banks are in large degree country banks, it is probable that the percentage of commodity collateral as compared with stock exchange collateral for State banks would be larger than for national banks. However, the total of collateral loans for State banks is relatively small—559 millions, for 1909, as against

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"other loans and discounts" for State banks in that year of 1,112 millions, and as against a total of collateral loans of all banks reporting in that year of 3,975 millions. On the other hand, the collateral loans of the trust companies are very large: 1,222 millions for 1909, as against "other loans and discounts" for the trust companies in the same year of 460 millions. As the trust companies are chiefly city institutions, and as the concentration of trust company loans and capital in New York City is relatively very great, it would seem pretty clear that taking both State banks and trust companies into account would substantially lessen the percentage of loans "secured by other personal security, including merchandise, warehouse receipts, etc.," to total collateral loans. As the amount of commercial paper in this class of loans for national banks is probably small, it may be expected to be still smaller in the aggregate of collateral loans.

The following figures, for State and national banks, and trust companies, only, will, in the light of the foregoing, give us basis for some further conclusions regarding the character of banking assets in the United States. As before, the year 1909 is chosen:

(000,000 omitted) [1]

Resources	*State Banks*	*National Banks*	*Trust Companies*	*Aggregate*
Real estate loans	414	57	377	848
Collateral loans	559	1,939	1,222	3,720
All other loans	1,112	2,966	460	4,538
U. S. bonds	5	740	3	748
State, county and municipal bonds	65	156	155	376
Railway stocks and bonds	75	351	362	788
Bonds of other public service corporations	50	148	168	366
Other bonds, stocks, etc.	95	208	769	1,072
Total of items here listed	2,375	6,565	3,516	12,456
Total Resources	3,338	9,368	4,068	16,774

[1] This table is constructed on the basis of data in the *Report of the Comptroller* for 1913, pp. 774–78.

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This table makes clear that the figures for real estate loans given in the table for all banks, a few pages preceding, were much too high. It leaves the relations among the other items, however, not greatly changed. "All other loans" increase from slightly less than 23% of total assets to 27%. If we concede that one-half of the "all other loans" represents liquid "commercial paper"—a very liberal estimate, as we have previously concluded—we get about 13½% of the assets of these institutions in the form of "commercial paper," an increase over the 11½% to be assigned on the basis of the other table. The figure is the roughest sort of approximation. I attach little importance to the exact percentage, and the argument which follows is not dependent on any exact figure here. The proportion of collateral loans to total resources is changed also, and even more: collateral loans are 18% of total bank resources when all kinds of banks are included, and are over 22% of total bank resources when only State and national banks and trust companies are counted. If the foregoing is correct within very wide limits of error as to the amount of commercial paper, collateral loans very substantially exceed commercial paper. If all the "all other loans" should be counted as commercial paper, collateral loans are still not far behind them—22% as against 27½%.

What is the significance of this? We have seen that for national banks, the great bulk (over 66%) of the collateral loans were secured by stocks and bonds in June, 1915. We saw reasons for supposing that a higher percentage of stock exchange collateral would be found when State banks and trust companies are included. Suppose we assume that 75% of the collateral loans of all three classes of institutions here in question are based on stock exchange collateral.[1] This

[1] A single observation does not justify very confident conclusions, and

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would mean 16½% of the total resources of these institutions in stock exchange loans—still well above the 13½% we have assigned to "commercial paper." In any case, it is at least justifiable to contend that loans on stock exchange collateral are as great in volume as commercial loans. I think that they very substantially exceed them. But further, we have another large percentage of bank resources invested in stock exchange securities outright—chiefly in bonds. The aggregate for those investments in the institutions under consideration is 3,250 millions. This is something over 19% of the total assets of these institutions. Combining this with the loans on stock exchange collateral, we get nearly 36% of bank and trust company assets invested, directly or indirectly, in stock exchange securities, as against an assumed 13½% in commercial paper. Conceding that all the "all other loans" are commercial loans, the stock exchange assets still exceed them in the ratio of 36 to 27½.

In our second table, we have listed items which aggregate only 12,456 millions of the total resources for these institutions of 16,774 millions. The items listed, however, represent virtually all the credit extended by banks to industry, commerce, agriculture, the stock market, other speculation, and the State. The excluded items of main importance are: Due from other banks and bankers, 2,302 millions; checks and other cash items, 432 millions; and cash on hand, 1,411 millions—the three items aggregating 4,146 millions, which virtually closes the gap. These three

figures for subsequent years may alter this. There is reason for supposing that commodity collateral was unusually large in proportion in the Comptroller's figures for national banks in June, 1915, (1) because the banks had been trying to reduce stock collateral loans, following the collapse of the outbreak of the War, (2) because they were aiding cotton owners to tide over a period of stress, and (3) because of great grain speculation. Later: 1916 figures show this. Comptroller's *Report*, I, p. 30. Stock loans increase from 66% to 71.2%, of collateral loans.

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items are of immense importance as making for liquidity in banking assets, and as making possible extensions of credit to the business world, but it is not proper to count them when an estimate of the extent of bank-credits is in question. Our second table contains, for the three classes of institutions, all the items properly counted there, except overdrafts (small in amount) and one other big item which does not get into bank statements at all, namely, *overcertifications* and "*morning loans.*" Of this last item, more later. We may, then, recalculate our percentages on the basis of the credit extended by the three clasess of institutions, instead of on the basis of total resources. On this basis, the percentages are:

Real estate loans, 7.4%;
Collateral loans, 30%, of which we assign to stock exchange collateral, 22½%, and to other collateral, 7½%;
All other loans, 36.4%, of which we assign to "Commercial paper" 18.2%;
Total stocks and bonds, 26%.

Adding the percentages for stock exchange collateral loans and for stocks and bonds owned, we get 48½% of all extensions of bank-credit for these three classes of institutions in the form of credits extended to the security market. If everything else except the real estate loans should be counted as "commercial loans" the stock exchange credit would still exceed the commercial credit. If my estimate of 18.2% of bank-credit based on commercial paper is high enough,[1] the banks and trust companies have extended over two and a half times as much credit, at a given time, to the security market as they have to commerce. This on the face of the record. But there is, as above indicated, a

[1] The preceding argument would indicate that it is much too high.

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further item which does not get into the record, namely, overcertifications and "morning loans." Every day in the great speculative centres, and very especially in Wall Street, enormous advances are made to brokers, which are canceled during the day, but which, during their short life, are a real addition to bank-credit. To attempt to estimate this with any accuracy is hopeless, but the total on any ordinary day is enormous, and most of it is extended in connection with stock market transactions.

A final comparison,[1] which will conclude this perhaps too wearisome analysis of these figures, will consider the loans alone, neglecting the securities owned:

Of total loans:
- Real estate loans, 9.3%;
- Collateral loans, 40.8%, of which we assign to stock exchange collateral, 30.6%, and to other collateral, 10.2%;
- All other loans, 49.6%, of which we assign to "Commercial paper," 24.8%.

The development of bank loans on stock exchange collateral is a remarkable feature of the three or four decades preceding 1909. The following figures, of national bank loans in New York City,[2] illustrate the tendency:

[1] The figures for 1909 are fairly typical of the proportions of these items in the assets of the three classes of institutions for the ten years from 1904 to 1914. Since 1909, there has been some increase in the percentages of real estate loans and "all other loans," at the expense of the percentage of securities owned, and collateral loans, as these years have been years of reduced activity on the Stock Exchange. The changes are not important enough, however, to modify any conclusions which we shall base on the figures here given. All classes of loans have grown, and investments in securities have grown, but real estate loans and "all other loans," particularly the latter, have grown somewhat more rapidly.

[2] These figures are taken from Conant, *Principles of Money and Banking*, vol. II, p. 52.

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(000,000 omitted)

Date	Loans on Commercial Paper [1]	Advances on Securities
1886	146	107
1890	151	145
1892	160	183
1894	168	192
1896	151	162
1898	181	260
1900	185	384
1902	210	396
1903	239	391
1904	268	538

The tendency is not peculiar to America, however. The following table gives a classification of the loans and discounts of all the great European banks [2] in selected years from 1875 to 1903:

(Figures in francs, 000,000 omitted)

Date	Note Circulation	Commercial Loans	Advances on Securities
1875	9,699	4,027	828
1880	10,482	3,384	1,112
1885	11,662	4,050	1,231
1890	13,194	5,192	1,549
1895	15,896	5,328	3,669
1899	14,992	8,352	4,037
1900	15,906	8,514	4,171
1902	16,215	6,939	4,178
1903	16,539	6,147	4,129

We conclude, therefore, that the great bulk of banking credit in the United States, even of "commercial banks," is not commercial credit. Much of it, in the smaller places,

[1] The term "commercial paper," as here used by Conant (whose source is the *Comptroller's Report* for 1904 and preceding years), doubtless includes a good many items which we have decided not to count as commercial paper. The item, "advances on securities," also includes some items other than stock exchange loans, but not a high percentage in New York City. In 1913 the figures for all reporting banks in New York City were: collateral loans, 1,070; "other loans," 658. *Report of Comptroller*, 1913, p. 779.

[2] Taken by Conant (*Ibid.*, p. 51) from the *Économiste Européen* (April 29, 1904), XXV, p. 546.

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especially, represents in fact, whatever the form, long time advances to agriculture and industry. Most of it, in the great cities, and to a large extent in even the smaller places, represents advances to the permanent financing of corporate industry. Excluding real estate loans, more than half of bank-credit represents either ownership of bonds (with some stocks) or else advances on stocks and bonds. Another important part of bank-credit, which I shall not even attempt to measure, is employed in financing commodity speculation.

It is worth while to compare our figures concerning bank loans with Kinley's figures, which we have previously considered, for deposits made on March 16 of 1909, the year we have chosen for the bank loans figures. It is important to remember that "deposits," as used by Kinley in this investigation, does not mean what the term means in a bank balance sheet. Kinley's figures relate to the actual items deposited on the day in question, and not to the net balance after deposits and withdrawals have been compared when the bank has closed for the day. A large deposit in the balance sheet sense might show no "deposits" in Kinley's sense, in a given day; while enormous "deposits" in Kinley's sense might be so offset by incoming checks that virtually nothing is left on the balance sheet at the end of the day, for a given depositor. Kinley's figures thus give us a means of getting at the degree of *activity* of different classes of deposits in the balance sheet sense, and so, indirectly, of different classes of *loans*.

Loans and deposits (in the balance sheet sense) are, as we know, closely correlated. This is true for banks in the aggregate, and for banks individually at a moment of time. It is not generally true of a given individual deposit account at a moment of time, but through a period of time, for business deposits, it tends to be true that the items de-

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posited offset the amounts borrowed.[1] If the items deposited are numerous, if the depositor has an "active" deposit account, receiving a large flow of banking funds, as compared with his net deposit balances, we may infer that his loans are also active, that he pays off loans frequently, that his paper, in the assets of the bank, is "liquid."

I need not give the details of Kinley's figures again, as they have been elaborately analyzed in connection with the estimate of the "volume of trade." [2] The figures show that retail and wholesale deposits between them make up about 25% of the total deposits. This would serve to show that "commercial paper," which we have allowed to be about 24.8 of total loans, is slightly more active (and hence "liquid") than the average of loans.[3] It will also suggest, however, that our figure for "commercial paper," truly liquid, is too high, since we should expect this kind of paper to be more active than the average—unless, indeed, stock exchange collateral loans are so exceedingly active as to make a tremendously high average. I refrain from trying to get a definite answer on this point, since there are many indeterminate elements: among others, uncertainty as to the extent to which wholesale deposits and retail deposits *include* all commercial deposits, and uncertainty as

[1] For the depositor who borrows from several banks, but deposits only in one,—as a stockbroker—the items deposited will, of course, substantially exceed the amounts borrowed at the bank where the deposits are made. But this will not affect our argument for *classes* of depositors from *representative* banks in the community as a whole.

[2] *Supra*, chapters on "Volume of Money and Volume of Trade," and "Statistical Demonstrations of the Quantity Theory."

[3] The relevance of comparing wholesale and retail figures with figures for "commercial paper" may well be questioned, since our conception of commercial liquid loans would include manufacturers' paper which represents raw materials, work in process, and bills receivable. However, we have found reason to conclude that Kinley's wholesale deposits include a large percentage of manufacturers' deposits. (*Supra*, p. 245.) The comparison here is in any case rough. We do not need precise figures for the argument.

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to the extent to which they *exclude* manufacturer's deposits. The great bulk of Kinley's deposits, however, fall into the "all other" class, and the great bulk of the "all other deposits" are located in the great financial and speculative centres, particularly New York. We have concluded that they represent chiefly (a) transactions in securities; (b) other speculation; (c) loan and other financial transactions, particularly the shifting of call loans on stock exchange collateral. It is, then, the deposits of those connected with the great financial and speculative markets, particularly the stock market, whose deposits are most active, and whose loans are most liquid. Stock market collateral loans thus constitute the most perfectly satisfactory sort of bank loan, from the standpoint of liquidity. Though such loans do not make up the bulk of bank loans (we have concluded that they constitute 30.6% of the loans of State and national banks and trust companies in 1909), they do account for the bulk of banking activity, and supply the greatest part of the liquidity of total bank loans.

When we consider further the item of securities (chiefly bonds) in banking assets, we find another highly important source of liquidity. The sales of bonds in the great banking centres are enormous. The figures of bond sales on the exchanges do not begin to tell the story. One big bank in New York in 1911 sold more than half as many bonds as were sold in that year on the floor of the Stock Exchange.[1] It has been frequently stated that ten bonds, of those listed on the Exchange are sold over the counter for one on the floor. This is truer of Boston than New York. The "outside market" for unlisted bonds is a very important matter. Dealings among banks in these items and in foreign exchange are exceedingly important. This is especially true of the business of the great private bankers, as Morgan,

[1] Pratt, *Work of Wall Street*, 1912 ed., p. 264.

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Kuhn-Loeb and others. Much of this does not appear in Kinley's figures, since neither the deposits of the great private banks in other banks, nor the deposits made in the private banks themselves (so far as New York City is concerned) figure in his totals.[1] Had they been included, the

[1] Returns from private banks in Kinley's investigation of 1909 are virtually negligible, so far as absolute amounts are concerned, for the whole country. For New York City, they are absolutely negligible. The "all other deposits" reported by private banks in New York City for March 16, 1909, are one thousand, nine hundred and eighty-four dollars, in all! The grand total, "all other deposits" for all classes of banks reporting in New York, is over a hundred and ninety-eight millions. The great private banks are, thus, clearly not represented. They are not represented in any form, since Kinley's figures exclude deposits made by such banks in other banks. How important they would be, if included, one cannot be sure, since they keep their affairs pretty secret. Some information, however, is available. Thus, the Pujo Committee reports (*Report*, Feb. 28, 1913, p. 145) that on Nov. 1, 1912, there was $114,000,000 on deposit with J. P. Morgan and Company, exclusive of $49,000,000 on deposit with their Philadelphia branch of Drexel and Co. It is understood to be the practice of J. P. Morgan and Co. to keep no cash on hand, and to deposit with other banks all their cash and checks. On this date, they had on deposit with other banks $12,094,000, "which presumably included all their own funds." It may be assumed, therefore, that the remaining 102 millions was loaned out. There can be no doubt at all, I suppose, that practically all they had lent out was on stock and bond collateral. They are known to be one of the biggest lenders at the "money post" on the Stock Exchange. They are not supposed to do much business with ordinary merchants in the usual discount and deposit way.

I have found no figures for Kuhn-Loeb & Co., for total deposits made with them, nor for their deposits in other banks. The Pujo Committee (*Ibid.*, p. 73) states that for the six years preceding 1913 this firm held, on the average, deposits from interstate corporations amounting to over 17 millions. For J. P. Morgan & Co., this class of deposits amounted to about half of total deposits. (*Ibid.*, p. 57.) There is, of course, no assurance that this proportion holds with Kuhn-Loeb's deposits.

These figures are very great, however. For the week ending April 3, 1915, for example, only three banks (the National City Bank, the National Bank of Commerce, and the Chase National Bank), and only two trust companies (the Bankers Trust Company and the Guarantee Trust Company), held deposits exceeding those credited to J. P. Morgan and Co., and only one of these, the National City Bank, very markedly exceeded the Morgan deposits. The majority of the New York Clearing House banks had less than the deposits of interstate corporations with Kuhn-Loeb.

As all the big private bankers deal chiefly in stock exchange loans and securities, and foreign exchange, and as this kind of business has been shown

percentage of the "all other deposits" would have grown, and we should have had still more impressive evidence of the fact that modern banking in the United States is largely bound up with the security market, and that modern bank-credit gets its liquidity chiefly from that source.

The story is even more impressively told by the figures for bank clearings, which include the transactions between banks, and the transactions of the private bankers. In New York, in 1909, total clearings for the year were 104 billions, as against 62 billions for the whole country outside New York.[1] That bank clearings are closely correlated with stock exchange transactions, has been demonstrated fully by N. J. Silberling, who has shown the following correlations: New York Stock Exchange share sales with New York clearings, r = .718; total clearings for the country with New York share sales, r = .607; total clearings for the country with railway gross receipts (as representative of ordinary trade), r = .356.[2] The active deposits and the liquid loans are chiefly connected with activities in finance and speculation.

Now two important practical conclusions are suggested by this analysis. The first is that the complaint of many farmers, merchants, politicians, and even scientific writers

to be exceedingly active and to call for large checks and clearings, we may assume that Kinley's figures would be greatly increased if they were included.

The trust company reports for New York in Kinley's figures are also very incomplete. New York trust companies report less than twice as much as Boston trust companies, and an absurdly small amount as compared with banks. *Cf.*, *supra*, the chapter on "Statistical Demonstrations of the Quantity Theory."

[1] It has been supposed by many writers that New York clearings exaggerate New York transactions as compared with the extent to which outside clearings represent transactions. Such evidence as we have would show that this is not true to a sufficient degree to modify the present argument. Clearings are less than deposits in both New York and the country outside. *Supra*, chapter on "Statistical Demonstrations of Quantity Theory."

[2] "The Mystery of Clearings," *Annalist*, Aug. 14, 1916, p. 198. *Supra*, chapter on "Volume of Money and Volume of Trade."

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that too much money and bank-credit are at the disposal of Wall Street and other speculators rests on a misunderstanding of causal relations. Wall Street does not, by using a large amount of bank-credit, take just that much away from ordinary business. Rather, it increases the amount available for ordinary business! Wall Street, and the other financial and speculative centres, supply the *liquidity* for bank assets, and so make possible loans on non-liquid paper. Banks do not need to have all their assets liquid. If they did, American banks would have long since gone under! The foregoing discussion of loans to farmers, and manufacturers and even merchants should have made that clear. But banks do need a substantial margin of liquidity, to protect the rest. They get it from stock exchange collateral loans, and from ownership of listed and easily marketable bonds, primarily. They get part of it from true commercial paper. Thus, the director of a country bank in Iowa told the writer that banks in his section—where banks owned in large measure by farmers, and dealing largely with farmers, are very numerous and important—make a regular practice of buying, through brokers, a considerable amount of notes of outside merchants. They do this to protect themselves. Their other loans, to farmers, while good, are slow. If pressed themselves, they cannot press their depositors. These notes bought through note-brokers, however, are impersonal. They can refuse to renew them. They can sell them again. They thus buttress the rest of their assets. They can thus lend more, rather than less, to local customers. They can safely get along with much smaller cash reserves. Similarly with the practice of country banks of sending a large part of their cash to Wall Street banks to be lent on call, for which the country banks get, say, 2% from the Wall Street banks. Their country customers would pay

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6% or more for that money in some cases, but the banks dare not tie up more of their assets in non-liquid local paper. They lend more, rather than less, at home, because they send part away. Wall Street is not "draining our commerce of its life blood"![1] Wall Street is rather preventing that life blood from coagulating!

A second important practical conclusion relates to the provision in the Federal Reserve Act which forbids Federal Reserve Banks to rediscount stock exchange paper. This provision was intended to keep funds from being diverted from commerce to stock speculation, and doubtless met the approval of many very good students of the subject. If the foregoing be true, however, that provision is a mistake. It is a mistake, first, because it will lessen, rather than increase, the power of the Reserve Banks to provide relief to commerce through aiding in making bank assets liquid *via* the stock market. It will limit the liquid assets of the Federal Reserve Banks in too great a degree to gold. It is a mistake, in the second place, because it prevents the Reserve Banks, particularly in New York and Boston, from making satisfactory profits—which is one important purpose of a bank! Even more important, however, is the third objection: it prevents, in large degree, the Federal Reserve Banks from being effective weapons against the "Money Trust." How far we have a "Money Trust" need not be here argued. The Pujo Committee, relying in considerable degree on admissions of prominent financiers that "concentration had gone far enough," and on the inability of Mr. Baker to find more than one issue of securities of over $10,000,000 within ten years, without the coöperation or participation of one of the members of a small group, concluded that we have a "Money Trust" in the sense that there is "an established and well-defined

[1] See any Congressional debate on "the Money Trust."

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identity and community of interests between a few leaders of finance . . . which has resulted in a vast and growing concentration of control of money and credit in the hands of a comparatively few men." [1] How far this conclusion is justified is, of course, a matter that would require elaborate discussion. There seems to be evidence that there is, since the death of the elder Morgan, a decided loosening of ties. One feels the need, moreover, of discounting very considerably many of the conclusions of the Pujo Committee. The present writer feels that the case has been made, however, that there has been, and probably continues, a much greater concentration of such control than is desirable. Whether or not there is at present such a "Money Trust," it seems pretty clear that temporary, if not permanent, alignments, may give effective monopoly control when the issue of very big blocks of securities is involved. For present purposes, however, it is enough to note that *if* there is, or should come to be, a "Money Trust," it is a trust concerned with *financing industry, through handling security issues*, and not a trust *in the granting of ordinary commercial credit.*[2] If, therefore, the Federal Reserve Banks are to compete with it, and break its monopoly, they must do it by entering the market with funds for the financing of corporate industry. Power to rediscount commercial paper seems a feeble and hardly relevant weapon against a combination concerned with purchasing securities, and making collateral loans! No doubt, this power is worth something. If an independent investment banker wishes to compete with a "Money Trust" in financing a new enterprise, he can go to his com-

[1] *Pujo Committee Report*, Feb. 28, 1913, p. 130. *Cf.* also p. 138 (statements of Messrs. Baker, Reynolds, Schiff, and Perkins), and p. 160. for statements regarding the testimony of Messrs. Morgan and Baker.

[2] I know no responsible writer who has charged that there is a monopoly, or a tendency toward monopoly, in this matter.

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mercial banker, and offer collateral security for a loan; if the commercial banker wishes to aid him, but is short of lending power, he may, if he has plenty of commercial paper available for rediscount, rediscount it with the Federal Reserve Bank, and so get the additional funds. But a New York bank, or trust company, with the bulk of its assets in stock exchange investments, may well not have enough commercial paper eligible for rediscount, and the Federal Reserve Bank could help very much more effectively if it could take collateral loans directly. A fourth, and even more important objection to the restriction on stock exchange collateral loans for Federal Reserve Banks relates to the power of these banks to aid in a crisis. Crises first hit the stock market. Financial panics are most acute there. The need for immediate and drastic relief is greatest there. If stock exchange loans lose their liquidity, what of the rest of bank loans? Power to lend on stock exchange collateral, in the hands of the Federal Reserve Banks, may well prove, in crises, an essential, if we wish to make our system definitely "panic proof." [1]

And now for a vital theoretical conclusion from this lengthy analysis of bank loans. For the quantity theory, and the "equation of exchange," all exchanges stand on a par. If one exchange takes place, that lessens the money and credit available for another exchange. The more exchanges there are, the less money and credit there are per exchange, and the lower prices must be, as a consequence. Nothing could be more false. Exchanges are not on a

[1] I am not naïve enough to suppose that this suggestion can be much more than an illustration of the bearing of my theory! I should even agree that the political difficulties are so great that we would do well to try out our system in times of stress before seriously raising the question of giving the Federal Reserve Banks the power to rediscount loans on stock exchange collateral.

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par.[1] Some classes of exchanges increase, rather than decrease the funds available for handling others. The activity of the speculative markets, making loans fluid, enormously increases the lending power of the banks for all purposes. Exchanges of securities, especially, instead of lowering prices, make it easier for prices to rise.[2] The

[1] Walker's version of the quantity theory, excluding credit transactions, escapes much of this criticism. *Supra*, chapter on "Equation of Exchange."

[2] It is nothing for Wall Street to "turn over" many times two billion dollars worth of securities. In a big bull year, this will be accomplished twelve or more times without effort—prices rising merrily, so long as no new supply of stocks and bonds comes in to make trouble. (See our estimate of New York security transactions, *supra*, chapter on "Volume of Money and Volume of Trade.") But let there be a liquidation by investors of anything like two billions, sold once, and the market feels a tremendous drag. It seems universally agreed that foreign selling of securities during the present War has been a great factor in checking advances in security prices in New York. The actual amount of liquidating by foreign investors, however, has been trifling as compared with the volume of sales since the War began. The best estimate of foreign liquidation is probably that of the National City Bank, which has taken careful account of previous estimates, and which has unrivaled sources of "inside information." The estimate of this institution is that from a billion and a half to a billion six hundred million dollars worth of foreign held securities have been liquidated in America since the beginning of the War. (This does not include foreign loans placed here.) This estimate is given in October of 1916. (Monthly circular of the National City Bank on "Economic Conditions, etc.," Oct., 1916, p. 3.) It is safe to say that no amount of "churning" of securities already in the market could have anything like the depressing effect on security prices that an unusual amount of liquidation by investors has. It is not increase in number of *exchanges* that depresses prices. It is increase in the floating *supply*. Activity in the floating supply makes it easier, rather than harder, for speculators to get banking accommodations which enable them to "hold" and "carry" securities, and activity in sales therefore positively tends to *increase* rather than to decrease, security prices. The broadening of the range of securities dealt in, moreover, instead of depressing the prices of those already active, helps to sustain them. Thus, brokers and bankers welcomed the recent revival of activity in the rails, following the bull market in war stocks. It gave a broader basis for loans. Banks would lend more liberally, and on narrower margins, if railroad stocks could be mixed with the brokers' war stock collateral.

Here again we see the significance of the distinction between long-time interest rates, connected with the volume of real capital, and the "money-rates."

Again, periodic payments of interest and dividends, temporarily locking up considerable sums of bank deposits which have to be built up in antici-

years of extraordinary stock sales have always been "bull" years. There have been big "bear" days,[1] but never big bear years, in the record of New York Stock Exchange share sales. The selling and reselling of speculative goods of securities, and of notes and bills are especially important as making it easier for banks to expand loans. To list all manner of items, as Professor Fisher does,[2] "real estate, commodities, stocks, bonds, mortgages, private notes, time bills of exchange, rented real estate, rented commodities, hired workers," and count them all as "actual sales," all part of the "goods"[3] which make up the "volume of trade," is to put the theory utterly beyond the pale. Seasonal calls on an inelastic money supply for actual cash to move crops and pay agricultural wages may make a real difference in the value of money; scarcity of money of the right denominations for retail trade may give an agio to such money,[4] but the money and credit used by specula-

pation of such payments, have a very much more serious effect on the money market than do payments many times greater in connection with stock sales. The tension in the London money market growing out of periodic accumulations and disbursements of the British Government is well known. The summer of 1916 witnessed a temporary tightening in Wall Street (in what was, generally, the period of easiest money the Street has ever known), from a similar cause—a bunching of dividend and interest payments, with some other large financial transactions. Money rates in New York regularly show the influence of such payments, temporarily. Money rates also show the influence of active speculation, as a rule, as shown by Mr. Silberling's investigations ("The Mystery of Clearings," *Annalist*, Aug. 14, 1916), but it takes a very much greater volume of stock sales than of dividend and interest payments to produce a given effect on money rates.

[1] As May 9, 1901, when 3,336,695 shares were sold. Compare Mitchell's stock barometer, 1890–1911, *Business Cycles*, p. 175, with records of share sales for those years.

[2] *Purchasing Power of Money*, 1913 ed., p. 186. The same criticism applies to Kemmerer, and Jevons. *Cf.* Kemmerer, *Money and Credit Instruments*, pp. 70–71. It is applicable to most quantity theorists.

[3] *Ibid.*, p. 185. It will be noted that at this point, Fisher lapses from the doctrine that volume of trade is determined by "physical capacities and technique." *Ibid.*, p. 155.

[4] *Cf.* our discussion, *supra*, in the chapter on the "Functions of Money," of money in retail trade.

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tors, bill brokers, dealers in foreign exchange, investment bankers, etc., increases, rather than decreases, the funds available for ordinary industry and commerce.

I have made clear the distinction between the direct and indirect financing of industry by banks. Great banks in Continental Europe often *buy* the stocks of new corporations, hold them permanently, put bank officers on the boards of directors, and supervise closely the operations of the companies. In America, while officers of commercial [1] banks often are members of boards of directors of the companies which borrow heavily from the banks, the practice is to make short-time loans to such companies (in form, if not in fact), and to lend on their securities, rather than to buy them. Our banks own securities in enormous amount, but they are chiefly seasoned bonds, rather than stocks of new or even well-proved, enterprises.

It is commonly supposed, too, that collateral loans are chiefly or almost wholly made to speculators, who buy securities in the expectation of holding them only till investors take them off their hands, and that investors buy them, not with bank-credit derived from loans, but with money or bank-credit which they accumulate by saving out of current income. It is particularly true of the higher grade securities, which savings banks and insurance companies can buy, that this is the case. The bank-credit thus serves for temporary, rather than for permanent financing, to the extent that this is true. I think, however, that the extent to which bank-credit serves for permanently financing industry is underrated. A good many investors have learned that the short-time money-rates are, on the long time average, lower than the yield on long-time securities.[2] They

[1] Our great private banks, bond houses, and investment bankers, etc., of course do buy stocks of new enterprises on a huge scale. Many of our big commercial banks have taken part in underwriting operations.

[2] See pp. 428–432, *supra*.

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have learned, too, that high-yield securities—securities high in yield as compared with the long-time average of money-rates—can be obtained which can safely be carried on margins of thirty, forty and fifty points, without danger that even such catastrophes as the slump in security prices at the outbreak of the War will wipe the margins out. The old distinction between investors and speculators, the former those who buy for the yield, and the latter those who buy for an anticipated rise in capital value, no longer corresponds to the distinction between those who buy outright and those who buy on a margin. The investor, buying a 6 or 7% preferred stock, carrying it on a forty point margin, with money from his bank or broker at 4 or 5%, is making 6 or 7% on his own forty dollars, and is making the difference between 6 or 7% and 4 or 5% on the sixty dollars lent him by his banker or broker. He substantially increases his yield thereby, and his risks, if he chooses his stocks carefully, and scatters them among a number of issues, are not great. For the banker or broker, such a loan is perfectly satisfactory. The margin of security is wider than that demanded on more speculative securities. Such a borrower will receive consideration when more speculative loans are being called, or not renewed. The investor of this type is, in effect, engaging in a form of banking business. He is lending to the corporation funds which he has borrowed from others; he has put up his own capital for the same purpose that the bank uses its capital—to supply a margin of safety to those who have taken his short-term promises to pay. Like the bank, too, he converts rights to payments at a later date into rights to payment at an earlier date. He is one of the links in the chain whereby the wealth of low saleability employed in industry becomes distilled and refined till it enters the money market. His profits come in the difference in the

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yield as between more saleable and less saleable forms of rights.

The extent of this practice cannot be stated, so far as any data to which the present writer has access are concerned. The writer has met the practice in a good many cases. One brokerage house, with whose operations the writer has considerable acquaintance, makes a practice of advising its more conservative customers to do this. A good many brokerage houses sell investment securities on the "instalment plan," which often means, in practice, that the initial margin put up by the investor is his only payment, and that the security is gradually paid for by letting the yield increase the margin. During the extremely easy money of the present War period, occasional reference has been made in the financial papers to the practice of buying even the highest grade bonds on this basis—the yield of the bonds being very substantially higher than the money-rates, giving a comfortable profit to those who hold the bonds on a margin.

That the practice is not wider spread is due primarily, probably, to the temperamental qualities required. The investor, proper, is commonly a very conservative person, who has an unreasoning distrust of speculation, and to whom the word, "margin," necessarily suggests speculation. That buying a stock on a margin is the same sort of thing as buying the equity in a mortgaged farm, does not occur to him. On the other hand, the man who knows the market well enough to be willing to deal on margins, frequently is not content with the slow process of accumulation which comes from annual yields, and prefers to take larger chances in speculation on capital values. But there is an intermediate class, who buy investment securities, with narrow range of fluctuation in capital values, for the sake of the yield, and who buy them on margins, margins

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ample to enable them to sleep at night, and to neglect the daily market reports. I think that there are indications that this class is growing larger, and more important. Doubtless much more important than individual "bankers" of this sort, however, is the enormous number of houses dealing in securities, "wholesalers" and "retailers," who find profit on their "wares" even while on their "shelves," through the differential between the yield and the charge made by commercial banks on collateral loans. A very large percentage of collateral loans is made to institutions of this type. As this practice becomes more important, the result must be to widen the money market, to increase the proportion of banking capital that goes permanently into financing industry, and to reduce the difference in yield between short-time paper and long-time securities—in other words, to bring the "money-rates" closer and closer to the long-time interest rates.

This would have seemed very strange and weird to Adam Smith. It means, in effect, that the bulk of our banking credit is, directly or indirectly, financing our industry rather than our commerce. Adam Smith thought that a bank could safely lend to its customers only so much as they would otherwise keep by them in the form of money. Perhaps this notion, as growing out of some speculations regarding the general theory of money, should not be taken as the statement of Smith's practical attitude on the matter, but that practical attitude, as clearly expressed in the paragraph [1] following, is that a bank can afford to lend only for mercantile operations that are carried through in a very moderate time, that the bank can afford to supply only the minor part of the circulating capital, and no part of the fixed capital, of a merchant, or manufacturer, no part of his forge and smelting house, etc. Such loans lack the

[1] *Wealth of Nations*, Bk. II, ch. 2, ed. Cannan, I, pp. 187 and 290–291.

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liquidity which the bank must insist upon. Only those persons who have withdrawn from active business, and are content with the income upon their capital, can afford to lend for such purposes. The theory is sound, on the basis of the facts as Smith knew them. But modern corporate organization and modern stock markets have changed all that. Anything that is highly saleable can come into the money market, and the modern corporation organization of business, coupled with organized stock exchanges and a large and active body of speculators, has made the forge and the smelting house as saleable as the finished product.

This is not to accept Schumpeter's doctrine,[1] so far as the United States are concerned, that it is primarily the bankers, the manufacturers of bank-credit, who make the decisions that turn industry from old to new lines. They do not, on the whole. In Continental Europe, particularly Germany, they do to a much greater extent. Criticism has been made of our American commercial bankers, as contrasted with German bankers, that the former are parasites, who insist on sure things, and refuse to take chances with other business men in the development of industry. To the present writer, our banking system seems to be rather a more developed system than that of Germany, in that the "division of labor" has gone further with us, and risk-bearing and the manufacturing of bank-credit have been more sharply differentiated. We have bankers enough who are "risk-bearers." But they are, on the whole, "private bankers," "investment bankers," and the like, who do not manufacture a great deal of deposit credit, but rather borrow heavily from the commercial banks, which are the great manufacturers of bank-credit. Under our system, the decisions which divert industry from old to new lines are more democratically made, by speculators

[1] *Theorie der wirtschaftlichen Entwicklung*, chs. 2 and 3.

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and investors under the leadership of private bankers, and sometimes without that leadership. These constitute the important intermediary which transforms stock exchange securities into the basis of bank-loans. The commercial banker buys, in general, not the stocks, but the note of the private banker, broker, speculator, or investor, with the stocks as collateral. If investment bankers, speculators and investors decide to support old ways of doing things, the banks lend on the securities of the old kinds of businesses; if investment bankers, speculators and investors turn to new things, the commercial banks follow suit. Commercial banks can and do discourage certain types of enterprises by refusing loans with their securities as collateral, or by requiring very heavy margins with such loans, but even these may be developed, and are with us on a large scale developed, on banking credit, advanced by the speculators and private bankers who borrowed it from the commercial banks with other securities as collateral. The commercial banks of the United States may to a very considerable degree check dynamic tendencies, but in general, they do not lead and direct them. Bank-credit, directed by others than commercial bankers, does, however, enormously facilitate both the starting of new enterprises and social readjustment to them.

How far can the total wealth of the country, agricultural as well as industrial, be brought into the circle of the money market? The full answer to the question would go far beyond the limits of this book. If agriculture can be brought under the control of large corporations, there is little reason for supposing that it, too, might not come in. There are some peculiarities of agriculture, special dangers of drought and flood, dangers of over-production and low prices, wide seasonal fluctuations in conditions, which make it hard to standardize in any case. But mining and

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even the manufacturing of such things as primary steel products have wide variations in prosperity too. So long, however, as agriculture remains a matter of families on a homestead—and for social and political reasons, we may hope that this will always be the case—it is difficult to bring it in. Bonds of agricultural associations or of agricultural banks have had limited sale on the bourses of Europe. The present writer, for example, found it impossible to find in four great libraries in New York and Boston any quotation of the bonds of the *Bayerische Landwirtschaftsbank*. Apparently, in general, such securities have not high saleability. While this remains true, agriculture may expect to remain under a handicap of higher interest rates than industry and commerce.

If, however, all forms of wealth could be made equally saleable, we should find interest rates rising for those loans and securities which now have the highest saleability. They would lose the peculiarity which now enables them to perform a service as bearer of options. Money-rates and long-time rates of interest would tend to come together. Long-time rates on formerly unsaleable loans would fall, and rates on highly saleable loans would rise. The present low rates in the "money market" grow out of *differential* advantages.

We turn now to the third important aspect of the technique of banking, namely, the matter of cash reserves. First I would point out that this is merely a part of the more general problem of liquid assets. The difference between cash and liquid paper is a matter of degree. There is large possibility of substitution of the one for the other, as it becomes more profitable to use one or the other. When money-rates are low, it may well be worth while to carry large reserves; when money-rates are higher, the gains to be made by substituting paper for cash in the bank's assets

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are much greater. I have pointed out the use which great European banks, notably the Austro-Hungarian Bank, make of foreign bills of exchange as "reserve," selling bills when money is "easy," and the yield on bills is small, buying bills when money is "tight," and the yield on bills is large.[1] The great Joint Stock Banks of England, the chief sources of bank-credit in the great banking country of the world, also make use chiefly of deposits with the Bank of England as their "reserves." Some cash they keep, but it is "till money," rather than reserve. They carry, also, "secondary reserves" in highly liquid paper, stock exchange loans and commercial bills. The differences are differences in degree. The Bank of England does keep a large reserve in cash (including notes of the Issue Department and gold bullion) but it denies that it has any definite ratio in mind,[2] and it protects its reserves, when they are low, not by ceasing to loan, but by raising its discount-rate. The whole thing is highly flexible.

This is, in general, true throughout the world,[3] where banking is highly developed. A country which has expanding business, based on rising values of goods and rising capital values of anticipated incomes, which in turn grow out of increasing business confidence, etc., and out of the development of new enterprises which make readjustment necessary, expands its bank-credit to meet the situation. Expanding bank-credits in time grow so large that bankers feel larger cash reserves to be desirable. Their reserves may be also, in some measure, drawn upon by the growing

[1] *Supra*, chapter on "Volume of Money and Volume of Credit."

[2] *Interviews on the Banking and Currency Systems of England, Scotland, etc.*, Senate Document No. 405, 1910 (National Monetary Commission Report), p. 25.

[3] This is clearly the opinion of European bankers, as indicated in their statements to interviewers for the Monetary Commission. See, *e. g.*, statements by the *Deutsche Bank*, *Ibid.*, pp. 374–375, and the *Crédit Lyonnais*, *Ibid.*, pp. 224–226.

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retail trade and wage-payments, which call for more money in circulation. They meet the situation by raising money-rates. This tends to prevent the exportation of gold, and tends to encourage the importation of gold, which finds its way into bank reserves. Banks may even borrow directly from banks in other countries, to get the gold they need, or to prevent the exportation of the gold they have. The higher money-rates, also, tend to check marginal borrowing—the borrowing by those who see only very small profits to be made by the use of the bank-credit they borrow. If the rising values of goods, however, and the profits to be made by effecting exchanges, speculative and other, are large, the volume of bank-credit will, none the less, grow. If the tide of rising business confidence is strong, the banks will be disposed to accept securities and rights as collateral which they would distrust at other times. A very big difference indeed may appear between bank reserves in active times and bank reserves in dull times. The banks need less reserves in proportion to deposits in active times, because the very activity itself increases the liquidity, the saleability, of their paper assets, and so makes actual cash less necessary. Even in this country, the practice of counting deposits in other banks as reserve is well developed. This is not only true of country banks, or banks outside the reserve cities. It has been, in considerable degree, the practice of the big trust companies in New York City. It is the practice of private bankers connected with the stock exchanges, and the practice of brokers, who are, for many purposes, bankers, especially those who allow their customers to check on their accounts. Such houses may carry no cash at all. One, with whose workings the writer is somewhat familiar, makes the rule—"We pay by check and receive only checks." None the less, this house allows its customers to check upon it, and checks drawn on

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it perform all the functions of checks drawn on banks which keep a cash reserve. Of course, our new Federal Reserve system is built, in part, on the principle of collecting reserves in central reservoirs, and our banks will doubtless increase the practice of counting deposits with other banks as reserve.[1] They will feel the need for less reserves, also, with a wider rediscount market.

Within a given country, I think that we may safely generalize the doctrine that the causal relation between reserves and deposits is exactly the reverse of that asserted by the quantity theory, within very wide limits indeed. That is to say, increasing reserves are a *result*, and not a *cause*, of increasing loans and deposits. We shall further hold that the relation between them instead of being definite, is highly flexible. This is not to assert that reserves may not increase without a prior increase in loans and deposits. That has happened in the United States during the present War. It does mean, however, that increasing loans and deposits will pull gold into a country, and that increasing reserves do not force increasing deposits and loans.[2] If a country's business is growing, if that business is soundly based, so that expectations are being met, obligations being paid out of the income which arrives, on schedule time, to meet anticipations, there need be no effective check to the amount of gold that will come into the country to serve as reserves, within limits that are rarely reached. It is miscalculation, maladjustment of costs and prices in particular enterprises, failure of "interstitial adjustments,"

[1] The item, "Due from other banks and bankers" in our table of total bank resources for 1909, is 2,563 millions—about 12% of the whole and slightly more than the amount we assigned to "commercial paper." It is a highly important factor making for liquidity. For State, and National banks and trust companies it is almost as great—2,302 millions. The first figure does not include many great private banks.

[2] *Vide* Professor Taussig's history of the years, 1878–1890, in his *Silver Situation*.

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especially failure of particular crucial links in the business chain, as the businesses engaged in producing iron and steel, to respond to the needs of other expanding businesses, that check movements of expansion in business, not inadequacies of bank reserves.[1] As long as only wise plans are made, as long as they meet no mishaps, as long as the carrying out of the new plans does not itself so change the facts on which the calculations of business men have been based as to cut under anticipated profits, so long may business, within a given country, expand without danger from inadequate reserves. Of course, if the whole world is simultaneously expanding, the competition for gold in the international money markets may be so severe that all may be hampered.

That reserves will increase, as expanding credit, due to increasing business or rising prices, requires increased reserves, can hardly be disputed, I think, if we look at a country of small size, or (what is the same thing from the angle of economic analysis, so far as the present problem is concerned) if we take a particular part of a country. Seasonal movements of cash for reserves in this country have been obviously determined by the movements of credit, rather than the reverse. Expanding business at crop moving seasons, requiring advances of credit by country banks, and an unusual drain on the cash resources of the country banks, has regularly meant that the country banks draw cash from the New York banks. When the need for such cash in the country banks passes, when they can no longer employ it to advantage at home, they send it back to New York. New York, to meet the emergency caused by the withdrawal of cash, draws to a considerable extent on Europe for gold. It is not as easy for New York to get gold quickly from Europe as it is for France to get gold

[1] *Cf.* Mitchell's *Business Cycles*, pp. 495–496; and *passim*.

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in an emergency from England. More time is required. Inelasticity, too, in the forms of currency most needed for small transactions, has made very real difficulties for us. But that, within the country, the sections whose business and credit were expanding take cash reserves from those sections where credit is less urgently demanded, needs no debating. This is seasonal. But the same thing is true in the long run. As business and bank-credit have expanded, year by year, in Oklahoma, Oklahoma's cash reserves have grown. Bank-credit in a country cannot go on indefinitely mounting, if bankers are making unsound loans, if the values on which the loans rest are based on vain imaginings, if anticipated profits are not realized. But if a country have rich resources and intelligent entrepreneurs, with sagacious bankers who can discriminate between sound and unsound business, it may, within very wide limits indeed, expand its bank-credit without check from inadequate reserves, as its business expands, and as prices, particularly prices of lands and securities, rise.[1]

If the country in question be a very large country, however,—large in the sense that its business and volume of bank-credit are very large, and particularly in the sense that bankers' assets are of such character that a large volume of reserves is desirable—restraints on the process of expansion may come. Reserves will come in, but the resistance in stiffer money-rates will be felt. Bankers in other countries will compete with the bankers in the country in question for reserves. Rising money-rates will put an end to many marginal exchanges. They will lessen the saleability of many rights which might otherwise be available as banking collateral. The extension of bank-credit will feel a drag. There is large flexibility here. But, in a long run

[1] *Cf.* the chapter, *supra*, on "The Quantity Theory and International Gold Movements."

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period of many years, the volume of gold in the world will impose a maximum limit upon the possibility of expansion of bank-credit in the world as a whole. This limit is doubtless never reached. Within the limit, the variations in the volume of the world's credit are primarily determined by the other concrete factors we have been discussing. Proportionality between the world's gold and the world's volume of credit does not at all obtain. Under certain conditions, much higher proportions of reserves to bank-credit will be found in a given country than at other times, and the same will be true in the world at large.

I would refer again to the discussion by J. M. Keynes, quoted in Part II.[1] Reserves have absorbed enormous quantities of gold, easily obtained as a consequence of abundant gold production, in the past fifteen years. Proportions of gold reserves to bank-credit have grown. In the preceding period, when gold production went on less rapidly than business development, percentages of reserves were lower. Most bankers feel better with large reserves. When they can get gold, they prefer gold to other substitutes. When they cannot easily get gold, they use other substitutes, of the various kinds of paper, particularly, which have been described. Gold differs from other things, in bankers' assets, in degree, rather than in kind. Instead, therefore, of the law of the proportionality of reserves to volume of bank-credit, I venture the generalization [2] that, as gold production increases rapidly, the tendency is for the proportion of gold reserves to volume of bank-credit to rise; with diminished gold production, the tendency is for the proportion of reserves to fall, assuming that the factors other than volume of gold production which make for expansion of business maintain themselves.

[1] "The Prospects of Money," British *Economic Journal*, Dec. 1914.
[2] *Cf.* Conant's discussion, *Principles of Money and Banking*, I, ch. 7.

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Increasing volume of gold tends to increase the volume of trade. But there are other causes for the increase or decrease of trade as well. These causes, working in harmony with rapidly expanding volume of gold, lead to a very rapid growth of trade.[1] Working in the face of a drag from less rapidly growing gold supply, they strain the possibilities of bank-credit expansion. Various substitutes for gold in bank reserves are employed. Substitutes in the form of other forms of credit are employed. Barter is resorted to increasingly. Methods of employing other things than gold in the retail trade of a country are resorted to. "Gold-exchange" standards are devised. Countries "wait their turns" to come on the gold standard. Coöperation, not only within countries, but among countries, seeks to economize the scanty stock of the precious metal. Very large slack is thus revealed. But the expansion of business is checked, the volume of business confidence is reduced, the values of future incomes in enterprises is lowered, production is checked, and prices are reduced, (a) because the value of money rises; and (b) because the values of goods and income-bearers is reduced. The exchange side of production is hampered. Substitutes for gold, through increased activities of bankers and other agents of exchange, are costly. Greater tolls on values are taken by those who handle the mechanism of exchange. It does make a difference whether or not the world's gold is abundant! But the difference is not made solely, or even mainly, in the price-level.[2]

The reserve function of money is essentially a *dynamic* function. The reserve function is merely a phase of the bearer of options function.[3] It is the practice of quantity

[1] This would seem to be Mitchell's view. *Cf. Business Cycles*, p. 494.
[2] *Cf.* chapter XIII.
[3] *Cf.* the chapter on "The Functions of Money," *supra.*

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theorists to speak of "normal" ratios between reserves and deposits (or reserves and demand liabilities), and to speak of the "static" laws governing this relation. This is true of Kemmerer, of Fisher, of A. P. Andrew, and, in general, of contemporary quantity theorists. Kemmerer very explicitly puts it as a matter of static theory, "If we divide the money of the country into two parts; one, that used directly in daily cash transactions, and the other, that kept in banks as reserves, it may be said that, *under perfectly static conditions* [italics mine], the proportion of the total represented by each of these parts would be constant. Each banker would find from experience what proportion of reserve to liabilities it was advisable for him to maintain, and would order his business, as far as possible, so that his reserve would neither exceed nor fall below that most desirable proportion." [1] Kemmerer quotes the following passage from A. P. Andrew: "In the long run, *as apart from cyclic oscillations*, the quantity of bank-credit is governed by the quantity of money." [2] Fisher's view we have considered at length in Part II. It is essentially the same. He is working with the statics of the problem of money and credit. These different writers differ greatly in the extent to which they would insist on the validity of their static tendency in real life. Professor Fisher, as we have seen, is exceedingly uncompromising, holding tenaciously to his principle as subject only to slight modification during transition periods. Professor Kemmerer, in the chapter from which the quotation just given is taken, gives an important realistic analysis of dynamic conditions, and makes liberal concessions to the view that the ratio is not constant in real life.[3] Professor Taussig, whose view was

[1] *Money and Credit Instruments*, p. 80.

[2] *Ibid.*, p. 82. Italics mine.

[3] Kemmerer, in general, is less concerned, apparently, with defending a causal quantity theory than with defending the "equation of exchange."

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summarized at length in chapter IX, finds, in real life, so many exceptions to the doctrine of proportionality of reserves and deposits that he virtually abandons that doctrine. What I wish to insist on here, however, is that there are no static laws *possible* in this connection. The reserve function is a dynamic function. The theory of reserves must rest in an analysis of friction, of transitions, of dynamic uncertainty and dynamic change. It is a part of the general theory of liquidity of bank assets, of saleability of rights, and the like. If one can find a "normal" amount of dynamic change, a "normal" amount of uncertainty, a norm for the coming of technical inventions, a normal prospect of war, a normal rate of gold production, a normal rate of growth for population, a normal amount of Jew-baiting in Russia, with a norm for migration, and if one can hold these norms, and a multitude of similar norms, in fixed relation to one another, one might have justification for speaking of a "normal ratio" of bank reserves to bank demand liabilities!

Apart from dynamic changes, from frictional elements which create uncertainties, in general, apart from uncertainty and irregularity and lack of "normality," there would be no occasion for bank reserves at all! To the extent that static conditions are realized, bank cash reserves may be, and *are*, dispensed with. It is well known that England gets along with surprisingly little gold. The total stock in the country has been smaller than the gold reserve of the Banque de France, and much of the gold in England was in use among the people, since small paper money (before the War) was not in use in England. The gold reserve

To the extent that this is true, I have little quarrel with his doctrines. To "prove" the "equation of exchange," however, is, first, a work of supererogation, and, second, in no sense a proof of the quantity theory. *Vide* the chapters, *supra*, on the equation of exchange and on statistics of the quantity theory.

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of the Bank of England has been usually only a fraction of that of the Banque de France. Some years since, the distribution of gold as between England and the United States, was, roughly, England six hundred million dollars, the United States, one billion, six hundred million. A larger proportion of gold was in reserves in the United States than in England. Yet England was doing the banking business of the world, while we had trouble in doing our own! The Bank of England carries virtually the only reserve in the country. The Joint Stock Banks, with demand liabilities vastly in excess of the demand liabilities of the Bank of England, carry only "till money" in cash or Bank of England notes, and for the rest, carry as their "reserve" their deposit credits with the Bank. A great deal of criticism, from Bagehot down (to go no further back) has been directed at the "inadequacy" of English banking reserves, and many dire predictions have been made as to the dangers that impended unless the reserves were increased. We shall probably hear less of this after the War! The Bank of England still stands! It has never failed to pay out gold over its counters, even though it has, with the aid of the government, doubtless restricted and controlled foreign shipments of gold. But it has met the unprecedented emergency better than any other bank in Europe, and today (Sept. 1916) is in exceedingly good shape. Sterling exchange at New York seems "pegged" at the "lower gold point," and apprehensions regarding the stability of the English financial system seem definitely allayed. It is aside from our present purpose to discuss war time conditions. I am rather interested in analyzing the features of the English money market which have made it possible, in the period preceding the War, for English bankers to get on with so little gold. As will appear, it is because English business and financial affairs have been more nearly "static,"

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have come nearer to realizing the assumptions of static economic theory, than is true of any other country on earth.

The very fact, for one thing, that England is the great *international* banker has meant a scattering of risks. Acute panics do not come in all countries on the same date. Bad business in one country may be offset by good business in another; drains of gold to one country may be met with gold flowing in from others. The same considerations which tend to stabilize the railroad business, as compared with, say, cotton-growing, apply to the international banker as compared with the banks of a single country or section. But further, the London market has developed coöperating agencies for smoothing out friction and eliminating uncertainties to a degree unknown anywhere else. An anonymous writer in *The Americas* for April, 1916,[1] has given an exceedingly interesting account of this organization of the London market,—the product of the development of generations. Let us enumerate some of the points: There is nowhere in the world so much expert judgment in the grading and evaluating of hundreds of commodities from all parts of the world. There is, coupled with this, a worldwide reputation for the experts of absolute integrity, so that producers in remote countries regularly ship ("consign") to London cargoes without definite arrangements, knowing that there are in London organized facilities by which the commodities are warehoused, expertly and fairly judged, and either sold at once or else made the basis of a collateral loan against which they can draw immediately. The institutions which make this possible are (a) the system of warehousing, with its certificates or warrants which give absolute title to the goods, and which are easily negotiable; (b) the organized arrangements in connection with the

[1] Published by the National City Bank of New York. *Vide* also Bagehot, *Lombard Street*, introductory chapter, and Withers, *The Meaning of Money*.

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warehouses by which commodities are received and either graded as they are, or separated and mixed with others to form standard blends readily marketable—this with rigid integrity and expertness which the whole world trusts; (c) a speculative community which has unlimited banking credit, ready to buy at a concession in price virtually any commodity—honey in the comb, sealing wax, pianos, farm machinery, what not; (d) the organized markets or periodical auctions which speculation and final purchase together support; (e) the banks, which, relying on the standardization of the commodities and the readiness of the speculative community, can without hesitation lend the money on which the distant shipper is relying to conduct his business.

What comes to London is fluid. Everything comes to London! The multiplicity of items dealt in gives stability to that business which deals with all—the banking business. The London Stock Exchange is no provincial affair, easily demoralized by an adverse rate decision! Securities of every country on earth are listed there, and speculated in. It must be a world catastrophe which really demoralizes the London stock market.

It will doubtless seem strange to many to say that New York cannot displace London as the centre of world finance, that the dollar cannot displace the pound sterling in financing international trade, because New Yorkers do not speculate enough! They do speculate enormously, but not in many things. A restricted list of stock exchange securities—almost wholly American; cotton—in which New York is the world centre; coffee, in which New York has the largest volume of speculative futures, though yielding precedence, ordinarily, to Havre, Hamburg and Santos [1] in

[1] This information is supplied me by an official of the New York Coffee Exchange, through the courtesy of Mr. W. H. Aborn, of Aborn and Cushman, Coffee Brokers, 77 Front St., New York.

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spot transactions. There is extensive sugar speculation at the New York Coffee Exchange, which has, indeed, recently changed its name to indicate the fact. There is a produce exchange in New York, but it is a very small affair as compared with the Chicago Board of Trade, and its operations and scope are infinitesimal when compared with the produce speculation in London. Of course, there is a vast deal of *unorganized* speculation in many things in New York, as in business everywhere, particularly in America. But, while the pecuniary magnitudes of organized speculation in New York are very great, the range of items dealt in is restricted. New York banks cannot possibly get such a variety of collateral, based on standardized and readily marketable goods and securities, as can London. New York, consequently, cannot finance international trade, save as an auxiliary to London—and New York banks must have vastly more gold in their vaults than London bankers need! As goods and securities become *more* marketable, gold—whose services are needed because of its *superior* marketability—becomes *less* necessary.

The whole story of London's organization would be a long one. London financial institutions have a degree of expertness, growing out of specialization, in large part, which makes all manner of paper fluid in the London money market which would lack fluidity in New York. The Acceptance Houses are a sort of international Bradstreet and Dun. They know intimately the standing and business of houses all over the world. . They do not give out their information, but they do put their stamp on the paper of business houses, thus standardizing it, lending, not money, but "pure credit," while the other banks, relieved of the necessity of investigating the paper, can buy it as a miller might buy No. 1 wheat. There is the extraordinary extension of insurance, so that virtually any kind of risk

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may be shifted to those well able to bear it. All this makes for liquidity, for "static" conditions in the money market, and dispenses with the need for gold.

As we approach static conditions, we need less and less gold reserve behind bank demand liabilities. *The static law of bank reserves is that none are needed!* I think we have here the real reason why writers who have sought to give us the law for a "normal" ratio have given us such vague phrases as "shown by experience to be necessary," and the like. When irregularity of income and outgo in a bank's business, non-liquid assets, business cycles, uncertainties, legislative changes affecting business, crop failures, changes in demand, new inventions, wars, are abstracted from, no reason can be given why a banker should keep any reserve at all! But these things are dynamic things. And it is characteristic of irregularities that they are irregular. To get a "normal" ratio out of them is not easy.

On the static assumptions, an "ideal credit economy" is perfectly possible. If everything that needs to be marketed is perfectly marketable, if the stream of business flows regularly and without friction in the same channels, if all contingencies are foreseen and dated in advance, a bank needs no cash reserve. All payments can be made by bank-credit. Banks bookkeeping becomes merely a refinement of barter, with *money* remaining as a measure of values, a unit for reckoning, but not being used as a medium of exchange, or as a bearer of options, or in reserves. The measure of values function is the great static function of money.

To the extent that static assumptions are not realized, we need money in bank reserves. This extent is a thing that varies from time to time, and from place to place. It is not the same for a given place from time to time, nor is it the same at all places at a given time. It is not the same for the whole world from time to time.

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Since friction, preventing the free marketing of goods and securities and services, exists, since there are dynamic changes which require readjustments through exchanges, we need the work of the banker and he needs cash. But there are other things than money which make for the "statification" of the market. The speculator does it. And the other agencies of the sort represented in the London market do it. They are substitutes for gold. Gold has no monopoly. The services performed by gold can be performed in many other ways, and by many other agencies. There is enormous flexibility in the matter.

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PART IV. THE RECONCILIATION OF STATICS AND DYNAMICS

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CHAPTER XXV

THE RECONCILIATION OF STATICS AND DYNAMICS

In the foregoing discussion of the value of money it has appeared that the value of money is not an isolated problem! Not only have we found it necessary to consider it as part of the general theory of value, but it has been advisable to bring it into relation with a large number of the special theorems of economics, including the law of supply and demand, cost of production, the capitalization theory, the doctrine of appreciation and interest, the theory of international gold movements, Gresham's Law, the theory of elastic bank-credit, and the general theory of prosperity. The book has thus become a book on general economic theory, viewed from the standpoint of the theory of money. It has been as contributing to the problem of the value of money that these other doctrines have been discussed, but I trust that they, too, have gained something of clarification from being considered in this relation, and that the emphasis on the rôle of money in general economic theory has helped in bringing the various elements in our current theory into a closer-knit interdependence.

The present chapter seeks to carry the conclusions so far reached toward a further unification of economic doctrine, by finding for certain contrasts, like that between statics and dynamics, a higher synthesis, so that it may be possible for students of dynamics and students of statics to speak a common language, to use common measures, to find that their phenomena are not, after all, of essentially different nature, and to come to agreement as to the relative im-

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portance of "static" and "dynamic" tendencies. It will appear that the theory of money and exchange plays an important rôle in effecting that higher synthesis, and is itself clarified by it.

The "theory of goods vs. the theory of prosperity," "statics vs. dynamics," "normal vs. transitional tendencies," "long run vs. short run" laws, "market vs. normal price," "abstract theory vs. concrete description," "historical or evolutionary study vs. cross-section analysis," "temporal vs. logical priority," "causation as a temporal sequence vs. causation as timeless logical relationships"—these, and similar contrasts have appeared frequently in the history of social thought, and have been especially refined and elaborated in the history of economics. We have even compounding of the notions into more complicated distinctions, as by Seligman,[1] in his two statements of the law of costs: in the short run, normal price tends to be the maximum cost of production; in the long run, normal price tends to be minimum cost of production. Seligman has illustrated his notion by an adaptation of the familiar figure of the sea-level and the waves: for short-run purposes, we may contrast the surface waves, the market prices, with the sea-level, the normal price; for longer run purposes we may see the level of the sea itself changing, under the influence of the tide, and may have a dynamic normal, which is still to be distinguished from the fluctuations due to the play of winds on the surface.

We have further an increasing recognition of the up and down play of forces accelerating and retarding the processes of industry and trade. For earlier writers, panics and crises were anomalies; since Mill's *Principles of Economics*, to go back no further, we have had increasing recognition of such occurrences as more or less periodic and inevitable,

[1] *Principles of Economics, passim.*

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bound up in the very nature of economic life itself, and of late there has been a fairly general acceptance of the notion of the business cycle, of an alternating rhythm of prosperity and depression. The explanation of this alternation has been attempted by numerous theories, one of which, that of Joseph Schumpeter,[1] rests the whole case definitely in the distinction between static and dynamic tendencies, and in the conflict between the opposing sets of forces which statics and dynamics undertake to describe.

We are told by the orthodox economist that war is wasteful, destroying laborers and goods, and lessening the wealth and productive power of society. We are told that it diverts labor from productive employments, that it turns huge masses of capital and labor to the production of goods which men cannot enjoy, that it burdens the people with taxes, etc. Static theory can see nothing but evil in war, from the standpoint of minimizing human sacrifices, and maximizing human enjoyments. None the less we see many war periods—notably that of our Spanish-American War, and the present World War, so far as the United States are concerned—periods of marked prosperity, growing out of the new expenditures which war itself involves. Mules and other farm products rose in price with the Spanish-American War, as the Federal Government bought them for the army; various factories concerned particularly with war munitions increased their activity, the gains of factory owners and farmers led them to increase their purchases, wages rose, and rose in part because part of the labor force was in the army. The Civil War did spell demoralization and economic ruin for the South, but for the North it gave a great dynamic impetus to trade, transportation and industry—an impetus, strangely enough, that was so great that the new industries and enterprises

[1] *Theorie der wirtschaftlichen Entwicklung.*

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which had grown up were able to absorb with little shock the million men set free from the Northern armies when the great struggle was over.[1]

For static theory, scarcity is an evil. A general overproduction is impossible. For the practical business man, confronted with the momentous problem of marketing his output, overproduction is a vital reality, and there are few times indeed when much more could not be produced if only a satisfactory market could be found for it. Static theory would see the whole explanation of this in maladjustment, too much of some things being produced, too little of others. This simple statement does explain much of the phenomenon, but it is far from telling the whole story, and even if it were a complete explanation, it would by no means dispose of the reality of overproduction as a constant menace, even when not a dire reality, facing almost every business man. Static theory at best tells what a completed adjustment would be; it does not touch the problem of how adjustment is brought about, and maladjustment overcome. Yet just that problem is the vital concern of the business man.

For static theory, high or low prices are matters of no concern. And abundance or scarcity of money and credit make no real difference in the economic process. Abundant money and credit exhaust themselves in raising prices, and the rest of economic life goes on unchanged. This doctrine of the quantity theory is, as I have undertaken to show in Part II, bad even as a matter of static theory. But it is only as a matter of static theory that it is even thinkable.

The economic theory of the 19th Century, following the lead of Adam Smith and Ricardo, has been accustomed to

[1] The writer has ventured some tentative predictions as to conditions following the present War in the New York *Times* Sunday magazine of Dec. 10, 1916, pp. 10–11.

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dismiss as utter folly the notions of the Mercantilists as to the balance of trade, and the importance of an inflow of gold, and has conclusively proved that protective tariffs tend to divert the labor, capital and land of a country from those lines of production they are best adapted to to lines for which they are less well suited. Critics have pointed out, as in the "infant industries" argument, that we cannot treat the labor capacity and technical knowledge of a country as constants, that the temporary encouragement of one line of industry by a tariff may so modify the data of the situation that the country may in time become better adapted to the protected industry than to other lines. And I think that we may well go further, and make substantial concessions to the doctrines of the Mercantilists as they themselves stated them, seeing in a favorable balance of trade, and in expanding exports and diminishing imports sources of impetus which are not subsequently neutralized by the static process of equilibration. I do not conclude from this that protective tariffs are commendable, any more than I conclude that war is commendable. Both may give dynamic impetus, and lead to economic development. Both may lead to political corruption, to iniquities in the distribution of wealth, to waste and suffering of various kinds, in which honest and patriotic men suffer, and cunning and unworthy men gain. The point here is simply that static theory does not tell the whole story regarding either tariffs or wars. It may well be true—I think it is true—that static theory offers the more important principles for judging the results of wars and tariffs.[1] It

[1] There are important dynamic and "frictional" considerations opposed to protective tariffs, as well as static considerations. Very many of the "intangibles" later to be discussed depend on free trade. A high percentage of England's "capital" would be destroyed by protective tariffs and trade restrictions, and to a less degree this is true of all countries. *Vide* N. Y. *Times* Sunday magazine, Dec. 10, 1916, pp. 10–11.

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is the central problem which I have set myself at the outset of this discussion to find a way to bring static and dynamic considerations *under a common measure*, to reduce them to homogeneity so that comparisons may be instituted, and so that the student of statics and the student of dynamics need not talk merely at cross-purposes. But we do not achieve this result by ignoring considerations in either sphere.

Bastiat, with a fine show of logic, has sought to rule out of court the doctrines that extravagance and tariffs, etc., are sources of prosperity by his emphasis on the "Unseen," as opposed to the "Seen." The prosperity growing out of the extravagant expenditures of one brother is open to all eyes. The consequences of the savings of the frugal brother men do not see so easily, and do not attribute to his frugality. Doubtless Bastiat is right in his main theses. But one point needs emphasis: that which is "Seen" stirs the imagination of men. And imagination energizes human activity. The motivation of economic life is a psychological matter.

And so at a host of points the contrast may be drawn, in one or another form. The pure, abstract, static theory gives one conclusion; the other approach suggests one different.[1]

How is it possible to give proper weight to considerations drawn from such divergent spheres of thought? Indeed, how

[1] A case in point is the discussion of the effects of increment taxes on the building trade, participated in by Professor R. M. Haig and the present writer in the *Quarterly Journal of Economics*, Aug. 1914, and Aug. 1915. The doctrines criticised in my article were static theories, and my criticisms made the static assumptions. Professor Haig, accepting the validity of my criticisms on the assumptions laid down, for the most part, seeks to recast the argument on a dynamic basis, emphasizing dynamic and "frictional" considerations from which my argument had abstracted. I think that what difference of opinion remains between us would probably be removed if the distinction between static and dynamic were clearly drawn and rigidly adhered to.

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shall we weigh the dynamic considerations at all? Static theory presents itself in quasi-mathematical form. At times, it parades itself in equations, and it readily enough, without arousing a feeling of incongruity, expresses itself in mathematical curves, with ordinates and abscissæ. One static tendency finds itself in marginal equilibrium with another, and the margin is expressed in quantitative units, commonly sums of money. Static doctrine does, indeed, lay claim to precision and exactness, and static tendencies may be weighed against one another. But how shall one undertake to give quantitative measure to such a thing as the educational influence of a tariff on silk manufacture? How measure the dynamic impetus of a new chain of banks on the industry and trade of the region affected? How gauge the importance of a new advertising scheme, or a new invention? Dynamic considerations are commonly presented in vaguer, looser form than static theories. Usually we have merely a statement of a qualitative tendency, without effort to make the importance of the tendency quantitative. Indeed, I think it safe to say that one chief difference between statics and dynamics is that those tendencies which can be most easily formulated have been recognized by statics, while those which are less understood, and less precisely formulated, are left to dynamics! A big part of the difference is methodological, rather than inherent in the nature of the phenomena themselves.

I think that it needs little argument to show that all the contrasts listed at the beginning of this chapter do not run on all fours. Compare, let us say, the contrast between "statics and dynamics" with that between "historical and cross-section" study. Concrete, realistic history is not dynamic theory. A realistic description of society viewed at a given short period of time is not static theory. Both

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statics and dynamics are *abstract*. *Laws* are not the same thing as description and narration. The assertions of both statics and dynamics are commonly made on the assumption, "*cæteris paribus*." A new bank will stimulate business in a western town if bank-robberies do not come into fashion! A tariff on wool will tend to educate the farmers in sheep-raising if the habit of relying on governmental assistance does not develop, and make them more, rather than less, inert,—or sharpen their political rather than their economic acumen. Concrete history need not always verify dynamic laws! [1] It is, above all, important to insist that the distinction between statics and dynamics is not the same as the distinction between theory and description, or between the abstract and the concrete. Evolutionary study may result either in concrete history, or generalized laws; cross-section study may be either concrete description or abstract formulæ concerning forces in equilibrium. And there may be varying degrees of abstractness in both cases.

The contrast between long-run and short-run tendencies is not necessarily the same as that between statics and dynamics. This former distinction does recognize one factor which is sometimes classed as "dynamic," namely, "friction."—"Friction," by the way, is a blanket term which covers a multitude of sins of imperfect analysis and lazy thinking! It is far from a simple, unitary thing. Sometimes it seems to mean the action of the whole social order, other than the economic values!—But dynamic, as used by the two writers who have used the term most precisely, J. B. Clark [2] and J. Schumpeter,[3] is reserved for those factors in economic life which make for constructive

[1] *Cf.* my review-article, "Schumpeter's Dynamic Economics," *Pol. Sci. Quart.*, Dec. 1915, p. 645.

[2] *Distribution of Wealth; Essentials of Economic Theory.*

[3] *Theorie der wirtschaftlichen Entwicklung.*

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change. Neither writer would call mere habit and inertia, which make readjustments slow, or the necessities of physical nature, which retard readjustment, by the name, "dynamic." It may be noted, in passing, that both writers limit the term quite strictly to changes *in* economic life growing *out of*[1] economic causes: Schumpeter narrows the dynamic factors to one, namely, *enterprise*, while Clark gives five general classes of dynamic factors, all of which are primarily economic in character. Neither extends his study to cover forces which are not primarily economic in character, but which none the less lead to economic changes.

Again, the "theory of prosperity" is not identical with "economic dynamics," though the two in large measure overlap. For one thing, while some writers, as Schumpeter, find the business cycle to be a necessary consequence of dynamic changes, and would maintain that no business cycle, no up and down of tempo in production, no panics or crises, are necessary if changed methods of industry, etc., did not come in, not all writers would so explain the business cycle. Some writers would find the explanation in the inherent instability of a money and credit economy, some in the inherent weakness of a capitalistic system, quite apart from necessary dynamic change. Irving Fisher makes no use of changed methods of production in his explanation of business cycles, though he does mention invention as one possible cause of a disturbance in normal equilibrium.[2] But further, dynamics is largely concerned with problems, like invention, changes in the economic habits of a people, methods of organizing industry, etc., which, while they may well bear on the problems of prosperity and depression, yet have interest for their own sake, and would be studied if there were no business cycles.

[1] *Cf.* my *Social Value*, pp. 139–140, n.
[2] *Purchasing Power of Money*, ch. 4.

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Further, the notion of statics, the other term in the static-dynamic contrast, is not identical with the "theory of wealth," or "theory of goods," or "theory of the wealth of nations" which such a writer as Veblen [1] would put in contrast with his "theory of prosperity." There is a normative, or practical, and polemical coloring in the body of doctrine growing out of Adam Smith, which Veblen would term, the "theory of the wealth of nations," which is lacking in the more colorless "statics" of to-day.

I do not find any of the contrasts thus far discussed quite satisfactory. I have been using the terms, statics and dynamics, as general terms to cover all these contrasts. I shall try to formulate a general contrast which includes most of the ideas passed in review, from a somewhat different angle, and then try to show that the contrast, while useful, is not absolute, and that it is possible to measure considerations drawn from one viewpoint in terms of considerations drawn from the other.

Let us take as our starting point the notion of a cross-section picture of society. I have set forth this notion in ch. 13 of my *Social Value*, and have elaborated it in the discussion of von Mises' theory in the chapter on "Marginal Utility" in this book. A cross-section picture may be made more or less concrete and descriptive, or abstract and analytical. If one looks at the picture of society in cross-section as given by Giddings in his *Principles of Sociology* (Bk. II, chapters on "The Social Population," "The Social Mind," "The Social Composition," and "The Social Constitution"), one finds a picture in which organization and system are made clear, but in which vivid description of concrete social facts is the primary concern. The account given is largely qualitative rather than quantitative. It is a picture of flesh and blood, as well as an account of

[1] *Theory of Business Enterprise.*

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functioning. It is, perhaps, not easy to realize that Giddings is doing the same general sort of thing that the pure economic theorist is doing, with his picture of a static equilibrium of economic values. But what economic theory is concerned with is, after all, to be found in Giddings' scheme. The pure theorist takes for granted the physiographic environment, whose influence Giddings takes into account. The theorist abstracts from biological and racial factors. He assumes a social population, a social order, a political system. He has not taken into his purview the social mind as a whole, in his static theory. Rather, he has been concerned with only one part of the social mind, namely, the economic values. Economic values, and the objects of economic value, have been the data of the static theorist. Given scales of economic value, such that for one quantity of goods of a given kind, a given value per unit will obtain, given all of these value-scales, and given the quantities of goods and services whose values are in question, and static theory will furnish an equilibrium picture, in which the price relations of different kinds of goods are made clear, and their values are measured. The value-scales, and the absolute magnitudes of value at different points on the scale, are assumed, are data. Further, in order that the notions may be made mathematically precise, a unit of value is needed, and this is commonly the value of the money-unit, which is assumed to be constant. The picture then becomes systematic. There is a system of values, expressed in prices, which is stable, so long as the data do not change. It is mechanically conceived, and illustrated by various mechanical symbols, as balls in a bowl, or connecting reservoirs, or, best of all, by intersecting curves. It is an abstraction from the living, pulsing, organic whole of the social mind—the intermental life of men in society. It squeezes much of the

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life out of the phenomena it describes. It makes them exact, only by making them mechanical. It thus becomes exact by becoming, in considerable degree, superficial and abstract.[1] This is not to condemn static theory. Static theory has proved its usefulness by solving too many problems for such a statement of its limitations to involve a condemnation. But the statement of its limitations will aid us in seeing its relation to that vaguer body of doctrine which we call dynamics, or the theory of prosperity, etc.

Now this means that static theory is not *value* theory. It assumes a theory of value. It assumes the value-scales as data. It assumes the value of money as a datum. Static theories of supply and demand, cost of production, capitalization, etc., assume the value of money, as has been shown in Part I, and static theory, resting in the notion of accomplished transition, normal equilibrium, abstracting from the difficulties of readjustment, abstracting from friction, etc., misses the whole point as to the functions of money, as shown in Part II. Static theory proceeds by assuming a change in one of the elements of its situation, say one of the value-scales, and then tells what the new equilibrium will be after readjustment takes place, assuming that other value-scales remain constant, and that quantities of the objects of value do not change. Or, it assumes a change in the quantity of one of the objects of value, and then predicts the new equilibrium. The new equilibrium will often involve changed values and prices all around, and will often involve altered quantities of other objects of value. But the initial change comes from an alteration *from outside* the system in one or more of the data of the system.[2]

[1] *Vide* my discussion of Professor Patten's *Reconstruction of Economic Theory* in the *Political Science Quarterly* of March, 1913, and the *American Economic Review*, Supplement to the March number, 1913, pp. 90–93.

[2] *Cf.* Schumpeter, *loc. cit.*, pp. 1–101, and *passim*. That the quantity theory is essentially "static" will appear strikingly if the statements in

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Now dynamics, theory of prosperity, etc., are concerned with the causes of changes in the data with which statics works, in large measure. Among the problems with which statics has not adequately dealt, and in large measure cannot deal, are (1) the nature of value itself, and the laws governing changes in the value-scales; (2) the problems of readjustment, including the problems of money, credit and exchange; (3) the psychology of invention, of enterprise, and the like. (4) The reactions of economic values and economic organization on the non-economic phases of social life. (5) The reaction of the non-economic factors, as law, morals, art, religion, etc., on economic life. (6) The problem of prosperity and depression. I say that statics has not dealt adequately with these problems. Statics in its present narrow form cannot deal with them. But in considerable degree, I am convinced, statics can be made to deal more adequately with them, if its scope be broadened, and its limitations be made less rigid. Schematically, at least, the central ideas of statics can be applied to a large part of these problems. I may add that my list of six classes of problems with which statics has not adequately dealt is not meant as a system of categories. The list is incomplete, and the classes are not mutually exclusive. Rather, they overlap in large measure. In a large way, it might be said that statics is concerned with the laws of the equilibration of values, and that dynamics, theory of prosperity, etc., are concerned with the nature and causes of variations in the values themselves. The contrast may be put, in general, as the contrast between the *theory of value*, and the *theory of price*, statics being price-theory, and dynamics being value-theory. But this is a thesis which calls for much elaboration and qualification

the text be compared with Fisher's discussion in chs. 5–7 of *The Purchasing Power of Money*.

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before its significance is made clear, to say nothing of its justification being established.

We may approach the problem of bringing the two terms of the contrast together from either of two angles: (1) we may show that dynamic factors tend, in large degree, to submit themselves to measurement in terms of money-prices, which obey the laws of static marginal equilibrium. (2) We may show that all static prices presuppose values whose explanation is in terms of the same phenomena with which dynamics, the theory of prosperity, etc., have busied themselves, namely, considerations drawn from the study of social psychology, including the psychology of suggestion, imitation, mob-mind, the functional organization of minds into a social mind, social beliefs, social values of other than economic nature, and social institutions. (1) The evidence on the first point is already in considerable measure worked out, particularly by Veblen, in his *Theory of Business Enterprise*, and in his other writings on the nature of capital, etc. Something more in this direction I have done in my *Social Value*, and other writers have elaborated the notion. (2) The case for the second contention has been made in detail in my *Social Value*, and in what follows I shall rely chiefly on the discussion presented there, and in the chapter on "Value" in this book.

I take up first the thesis that dynamic factors may come under the static measure. Veblen has made much of the contention that modern "capital" is not, as Smith thought, and as orthodox economists in general have contended, a matter of physical accumulations of goods. The volume of business capital is a pecuniary concept, and may wax and wane with little variation in the physical stocks. "Under modern conditions the magnitude of the business capital and its mutations from day to day are in great measure a

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question of folk psychology rather than of material fact." (*Theory of Business Enterprise*, p. 149.) And in large measure Veblen's work is given to showing how factors of legal and social psychological nature get a money-measure. The actual capital of a business enterprise does not rest chiefly on the physical equipment, stocks of raw materials, etc., etc., which it possesses. To be added is "good will," and this includes (p. 139) established customary business relations, reputation for fair dealing, franchises, privileges, trade-marks, brands, patent rights, copyrights, exclusive use of processes guarded by law or secrecy, exclusive control of particular sources of materials, etc. Veblen contrasts things of this nature sharply with the concrete equipment, saying that the former are serviceable only to the owners, while the latter are serviceable to the community at large as well. The physical, tangible, and ethically commendable character of the physical equipment is everywhere stressed, while the pathological, anomolous, and sinister character of the less tangible and more recent "capital items" is always set before us—all the more effectively because Veblen maintains a satirical attitude of moral indifference, and presents the case with Olympian aloofness. I am not here concerned with the social welfare aspect of the matter, though I shall later speak of that. My present purpose is to make clear two points in Veblen's doctrine: (1) that he does bring these intangible things, which are the variables involved in his theory of prosperity, under the price measure; and (2) that he considers these prices as anomalies from the standpoint of the general laws governing the values and prices of concrete goods. To this last point I shall later take sharp exception. For the present, I wish to develop further the extent to which such factors may be brought under the general static measure.

The feature of static theory which Veblen chiefly em-

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ploys in giving a money-measure to his "intangible capital" is the capitalization theory.[1] The capital magnitude of the items of good will previously mentioned is a capitalization of the *income* which they are expected to bring in. And it may be said that a large part of Veblen's doctrine of the

[1] It is only as a matter of highly abstract statics that the capitalization theory (as presented in earlier chapters) can be maintained with any strictness. In fact, capital values are not always passive shadows, yielding freely to changes in anticipated income, and to changes in the rate of discount. Very often capital values become themselves substantial, become divorced from their presuppositions, can no longer be explained by any imputation process. This is particularly likely to be the case with lands in inactive markets. The income-bearer is as much an object of value as is the income; is often *immediately*, for its own sake, an object of value. The long-run tendency to assimilate this value to a capitalization of prospective incomes may be exceedingly slow in working out, if it ever works out. Indeed, a high capital value may sometimes be a means of increasing the income, since in the minds both of lessor and lessee the usual percentage return on capital will be a factor in determining what is a "proper" rental. If a capital value, no longer justified by prospective income, has behind it the sanction of actual cost-outlay, there may easily be a reflex from it on the size of the income itself. Such a capital value, unjustified by prospective income, but still believed in by the market, may function just as effectively as any other capital value. Book-values, not marked down to correspond with changed income-prospects, even when they cannot command purchasers, may still serve as a basis for *loans*—Veblen's theory of crises rests, as we shall see, in part on this fact.

Considerations of this sort strengthen still further the case against the marginal utility theory of value. To pass,—as Fetter and the Austrians in general seek to do—from marginal individual consumption values to market prices of consumption goods, then to prices of production goods, or to magnitudes of distributive shares, then, simply, by the capitalization theory, to capital values, with the notion that the original marginal utilities supply the psychological explanation at every stage of the process, the remoter values being merely built up of the original marginal utilities, is quite invalid. At every stage there is a hitch: the marginal utilities do not explain the prices or values of the consumption goods, as has already been elaborately pointed out; and the relation between the values of consumption goods and the capital values is very much looser and less direct than the static theory requires. Institutional, legal, and moral forces come in, not alone at the first step, in giving social weight to the wants of special classes and individuals, but also at the second, giving prestige to certain enterprises, and so higher values to their securities, giving banking support here and refusing it there, giving popular and patriotic support here, and not there, giving direct action of law, custom and tradition on certain *prices* (whence, indirectly on values), and leaving prices free to change readily in

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causes of the ups and downs of business rests on the complaint that this capitalization process is not rationally carried through—that incomes are overestimated, and that business men are tenacious of capital magnitudes once built up, and refuse to mark them down properly when the facts in the situation have changed. His theory of prosperity thus rests on non-rational enthusiasm on the one hand, and a certain kind of "friction" on the other hand, and apparently the difficulties in the situation as he sees it would largely disappear if these two elements could be rationalized, and the static theory work more perfectly. The elements involved in the capitalization theory, as shown in the chapter on that topic, are three: the anticipated income, the prevailing rate of discount, and the capital value, the last named being the child of the first two. The capital magnitude is a shadow, where the income is the substance. Veblen seems to find the trouble arising in that the capital magnitude takes on a substantial character, and refuses to play the passive rôle of shadow. It is interesting, in passing, to compare this theory of Veblen's with the theory of crises developed by Irving Fisher, from the standpoint of a body of doctrine which is purely static, and which Veblen has criticised as "taxonomic" in a high degree. For Fisher [1] the trouble arises from friction in connection with another element in the capitalization problem, namely, the interest rate. Business men think that "a dollar's a

other cases. (*Cf.* my discussion in *Quart. Jour. of Economics*, Aug. 1915, pp. 699–701.) The static theory of capitalization describes an ideal logical relation, while capital values are, in fact, built up by a psychological process which is logical only in part. In large degree, especially when the market lacks perfect fluidity, capital values are *immediate*, and not merely *derived*, values. In this, I think, I am in accord with the view briefly stated by A. S. Johnson in his recent review of Böhm-Bawerk (*Am. Econ. Rev.*, March, 1914, pp. 115–116).

[1] *Loc. cit.*, ch. IV. *Vide* Veblen's discussion of Fisher in the *Pol. Sci. Quart.* of 1908, and his discussion of Clark in the *Quart. Jour. of Econ.*, Feb. 1908.

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dollar," and refuse to let the interest rate be marked up in accordance with the doctrine of "appreciation and interest." This, likewise, leads to overcapitalization, leaves the passive shadow too big. I must confess that it seems to me that one theory is about as "taxonomic" as the other—that both rest on pointing out divergences from a static, "taxonomic" norm. In general, Veblen's work in this field consists in assimilating the "intangible" capital to the class of land, and other long time concrete income-bearers, but that is after all classification, systematization, "taxonomy." In saying all this, I am as far as possible from questioning the value of Veblen's work. Rather I rate it as of extreme significance. "Taxonomy" does not appear to me so dreadful a word as it does to Veblen. I should rather say that some taxonomy is good and some is bad, depending on whether or not it leads to fruitful generalizations, and deeper insights.

It is, as I have said, chiefly the capitalization theory which Veblen applies to these newly important intangible "capital-items." The phenomena of the stock-market, where such things are most actively bought and sold, and where they appear as differential portions of the capital values of securities, doubtless first called attention to them —though the item of "good will" as a business asset, for which a money-price is paid when businesses change hands, is doubtless older and wider than modern corporation finance. The capitalization theory applies to them most readily and obviously, as compared with other elements in the static theory of prices.

But as we become better used to the large rôle which these phenomena play,—not that the phenomena are new, but that their present importance is new, and hence our serious study of them is new—we are increasingly able to see that other elements of static theory also apply. *Static*

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theory applies increasingly as understanding increases! The vaguely discerned, the novel, the imperfectly analyzed, can be stated only in qualitative terms. As things are better understood, the mind seeks system, taxonomy, quantitative measurement. Business men to-day are well accustomed to applying *cost* concepts to many of these intangible magnitudes. Advertising, for example, is being worked out with increasing exactness, and business men are increasingly applying accounting processes to the determination of the question of *how much* advertising "pays." Well-known brands are capital items. Well-known brands have cost money! Business men contemplating the marketing problem may well balance the cost of creating a new brand against the cost of buying an old one, and may balance the cost of creating a new brand against the profit to be made from allowing an old one to deteriorate, through cheapening its process of manufacture. Trade-connections are capital items. They are also items which have been created by patient thought and labor and expense. Franchises, since the days when the public awoke to their value, have cost money to the corporations that possess them, and figure in corporate bookkeeping often. Even in the old days, they often had a cost, which commonly stayed *out* of the corporations' books, at least in that form, —bribes, entertainments to legislators and members of councils, and so on. In Part II of this book,[1] I have discussed "selling costs" as contrasted with costs of production in the narrow sense, and have pointed out how high a proportion of total costs these selling costs are. I have also indicated how many of these costs tend to be "capitalized." These selling costs are static measures of the elements of "friction" which interfere with the smooth working of static laws! An extension of statics, however,

[1] Chapter on "Volume of Money and Volume of Trade."

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can in considerable degree take account of them. It is, of course, far from true that cost doctrine will explain all of these intangible capital magnitudes. But this is likewise true of the prices of many tangible items. Cost doctrine does not hold universal sway even in the confines of the strictest static theory.

I have said that dynamic factors tend to come under the rules of static taxonomy to the extent that they become more accurately understood. The understanding here referred to is not merely on the part of the scientific theorist! The subject-matter of economic science is itself psychological. It includes the psychology of the business man, as well as the psychology of purchasers and laborers, and the general field of social-mental life that bears on economic processes. It includes the theories of the business men, as well as their aspirations and "motives." It includes their methods of computation, and the accuracy or inaccuracy of their prognostications. It has been pointed out recently that at the current price of copper (22c. per pound in Jan. 1916) the prices of copper stocks are very much lower than they were when copper reached the same price some years ago. Calumet and Hecla stands some two or three hundred points lower than it did then, and the same percentage difference is manifest in the case of many other stocks. But the explanation which the broker and market writer offer is that people have awakened to the fact that mining stocks are stocks with wasting assets, that the incomes from copper stocks cannot, therefore, be capitalized on so high a basis as similar incomes from other securities; that people to-day realize this fact as they did not some years ago; that the earlier capital-prices of copper stocks were vastly exaggerated on the basis of a careful estimate of probable total future income, etc. Japan, little used to the great prosperity growing out of sudden great increases of special

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kinds of business, found herself in such an orgy of war stock speculation that it was necessary to close the stock exchange in 1915. The United States, better familiar with the phenomena of boom and depression, seasoned by many experiences of similar nature, have found that on the whole,—at least in the opinion of many competent judges in January of 1916,—war stock speculation has been kept in reasonable bounds, thanks in large part to the conservatism and caution of bankers and brokers, and that the general economic situation is in fairly stable equilibrium, with most of the probable sources of disaster foreseen and "discounted." To "discount" is to make "static"![1] Whatever the business man can reduce to bookkeeping terms, and whatever he can measure by money in the market, the economist should be able to bring within the "orderly sequences of economic law."

In *Social Value*, I have pointed out how wide is the scope of the money measure. Waves of public opinion, of waning or waxing hope and belief, of patriotic fervor, of religious exaltation, of political movements of one or another kind—all these find some sort of money measure in the market. In the gold market in the early '60's in New York, the "bulls" sang "Dixie," and the bears sang "John Brown's Body"! It was patriotic to be a bear, and unpatriotic to be a bull. These considerations affected the prices very appreciably, at times, especially at the beginning of the speculation in Greenbacks. Waning and waxing belief in the triumph of the Northern armies manifested itself very strikingly in the prices in the gold market, as W. C.

[1] On Oct. 9 of 1916, I still venture the opinion that the stock market has shown wonderful conservatism in the face of extraordinary temptations. From Oct. 1915, to Aug. 1916, the "bears" dominated the market, and prices fell pretty steadily. The "bull" movement of Sept. 1916, seems to have reached its crest without passing the level of a year ago. The market may "run away," but it has not yet done so.

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Mitchell has conclusively proved, with a wealth of detailed evidence, in his *History of the Greenbacks*. But in less systematic markets, in less organized and regular ways, many things besides are given a money measure: "Against what, indeed, shall wealth be measured? Where are the markets which measure its fluctuations?

"But such markets exist, always have existed. Are there not streets where woman's virtue is sold? Are there not commonwealths where there is a ruling price for votes? Do not the comparative rewards of occupations indicate what inducements will overcome the love of independence, of safety, of good repute? We see men sacrificing health, or leisure, or family life, or offspring, or friends, or liberty, or honor, or truth, for gain. The volume of such spiritual goods Mammon can lure into the market measures the power of money. . . . When gold cannot shake the nobleman's pride of caste, the statesman's patriotism, the soldier's honor, the wife's fidelity, the official's sense of duty, or the artist's devotion to his ideal, wealth is cheap. But when maidens yield themselves to senile moneybags, youths swarm about the unattractive heiress, judges take bribes, experts sell their opinions to the highest bidder, and genius champions the cause it does not believe in, wealth is rated high." (Ross, *Foundations of Sociology*, pp. 171–172.) Ross is here interested chiefly in the problem of measuring the varying significance of wealth, symbolized by money, in terms of other and non-economic, goods. But it is equally true that money measures these goods. The range of the money measure is very wide. Nor is it confined to the exchanging process. Gabriel Tarde [1] has pointed out that money may function as a measure of non-material goods through gifts, public subscriptions, etc.

It is surely no extravagant claim to make that the meth-

[1] *Psychologie Économique*, vol. I, pp. 77–78.

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ods of static economics may be extended at least as far as the money measure goes! We shall later see reason for believing that fruitful results may come from an even wider extension of the static notion, at least as a schematic device.

In reducing static and dynamic considerations to common terms, we have now gone far. We have shown that a wide range indeed of the phenomena deemed dynamic, and largely ignored by current static theory, left to the discussion of such innovating students of the "theory of prosperity" as Veblen, are really in the actual practice of the business world treated in the same way as are the "static" phenomena of the values of physical goods and concrete services. And we have further shown how wide indeed is the scope of the static yardstick, the dollar. But this is only a part of the story. We have generalized statics. Can we similarly generalize dynamics? Or has our generalization of statics merely narrowed the field of dynamic considerations?

To this I reply that we may view the whole field likewise from the angle of what we have called dynamics, or theory of prosperity, or similar name. These terms are not satisfactory, in my view, and I have already used terms that appear to me better. My exposition on this point will be briefer than in the generalization of statics, since I may refer to what I have said elsewhere. In stating Veblen's contrast between "business capital" and "the wealth of nations," I quoted him as follows: "Under modern conditions the magnitude of the business capital and its mutations from day to day are in great measure a question of folk psychology rather than of material fact." The capital, or the wealth in general, of older and simpler days was a material matter, concrete goods and services, in his view. The newer items of capital are anomalies, presenting some-

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thing strange and novel, and sinister. I should maintain that, whether sinister or no, they are in principle at least not *novel* or *anomalous*. *All economic values are matters of folk-psychology!* All economic values are social values. All are to be explained on the same general principles that explain the values of the most complicated stock-market phenomena—except of course, that the application of the principles involves less complication in the case of such values as that of a loaf of bread. But value is always a matter of psychological significance, and never a matter of mere material fact. And these psychological significances are not explained by such simple individual phenomena as labor-pain, or marginal utility, but always by reference to the total social-mental system, including its laws, its mores, its institutions, its centres of power and prestige, its modes and fashions, etc. If Veblen has in mind the contrast between goods whose values rest in labor-pain or marginal utility, on the one hand, and values which rest in a folk-psychology on the other hand, the contrast is a false one. The first class does not exist. I shall not elaborate this point. I have developed it at length in *Social Value*, and in the chapter on "Economic Value" in this book. I should make the contrast, then, which seems to me to gather up the central significance of most of the contrasts we have been discussing, as follows: on the one hand, we may view the matter mechanically and abstractly, in terms of the equilibration of values conceived of like physical forces, expressed in prices; on the other hand, we may view the economic situation more fundamentally and realistically, seeing the interplay of men's minds, viewing economic values as parts of a social mind, a functional unity of many minds. We may treat society as a mechanism, or we may treat it as a living, pulsing, psychological organization. In short terms, our contrast may be between

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the theory of value, and the theory of price. And here we are back to our thesis set forth on p. 559 of this chapter.

The theory of value, as thus marked out, is still an abstraction from the totality of our cross-section picture of social, or even of economic, life. The essence of society is indeed psychological. But men have bodies, and live in a material world, and have an elaborate technology. Many of the factors which students of dynamics are concerned with grow out of biological and technological relationships, and are connected with physiographic influences. Can we bring all these into our scheme? Giddings and Spencer would answer affirmatively. For Giddings (*Principles of Sociology*, ed. 1905, p. 363): "All social energy is transmuted physical energy." Giddings guards himself (pp. 365–366) against a thoroughgoing monism, which would leave no distinction between mind and matter, but in general he would hold to the scientific goal of reducing the physical and psychical phenomena in society to a parallelism, so that concomitant percentage variation could be predicated of them, and so that considerations in one sphere could be expressed by considerations in the other. In the hands of Giddings and Spencer, such notions are handled with caution and discrimination, and command respectful consideration. One feels, however, that the starting point is a monistic metaphysics, and that the philosophical doctrine does not justify itself in its scientific application. In the hands of such a writer as Winiarski, however (*Rev. Philosophique*, vol. XLV, pp. 351–386; vol. XLIX, pp. 113–134; summarized by Ross, *Foundations of Sociology*, pp. 156–157), who makes all mental states mere forms of physical energy, and applies to mental processes the laws of mechanics, the doctrine becomes merely bad poetry! From the standpoint of the needs of social science, and from the standpoint of our present knowledge of social facts—to

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say nothing of general philosophical considerations—it seems clearly best to me to assume the common-sense doctrine of dualism as a premise: mind and matter are two different things; mind acts on matter, and matter acts on mind. We are then at this position, when it comes to bringing technological and physiographic factors into our scheme: on the one hand, the values control technological applications, and control the course of industry. New technological devices will be employed when the present worth of their anticipated products is great enough to overcome the values that compete with them. Land will be employed on that crop which gives the largest rent, etc. Men's physical activities, and their employment of their physical resources, are *motivated* by values. That is the *function* of values. On the other hand, physiographic and technological factors modify the lives and characters of men and peoples. *Values* are in part controlled by physiographic and technological conditions of life. But these technological and physiographic factors, in order to influence economic *conduct*, must first influence the value system. This they do, (1) by affecting the quantities of *objects* of value, and so modifying the marginal relations among the value-scales and the marginal values; (2) by affecting the lives of the people directly, and so modifying the value-scales themselves. Similarly I see no way of bringing the vitally important factor of heredity into our scheme in a direct manner, *in propriore persona*, but only mediately, as it (1) affects the character of the society, and so changes its value-system or its technological activity and volume of products, or (2) as heredity becomes a matter of concern to the society, and so an object of value, with its own place in the value-system.

There remains, therefore, in the field of technological, biological, and physiographic features affecting economic

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life a considerable residuum of economic problems for which, so far as I can see, no extension of the static method can be devised. I propose no scheme of static price analysis for balancing the effects of poor land and good heredity on the character of a society.[1] The problem must be approached by other methods specially suited to it, which we need not here discuss. But, given the values that rule in that society, we may be sure that our static picture of that value system will sum up much of the influence of the bad land and the good heredity, mingled with the other factors which have determined that set of values.

Once a factor has been introduced into the value system, once it has modified the value-scales, we may treat it by the methods of static price theory. The analysis of the factors controlling the value-scales is the problem of value theory. And here is, indeed, the central problem of the "theory of prosperity." What are the causes controlling the *mutations* of values? What factors cause values to rise, intensifying economic activity, stimulating trade, spreading prosperity? What brings about the crash in economic values (and consequently in prices), in panics and crises? Why the low values of the period of depression, giving slight stimulus to industry and trade, leaving economic life legarthic, inert? Increasingly it is recognized that the problems are problems of values and prices. It is no part of my plan to give answers in specific terms to these questions. That were the task of a large book!

[1] Nor do I see any method for bringing into our equilibrium picture the control which the environment retains over values by its power to *eliminate* those groups whose choices vary too widely from the norms of "survival-necessities." *Vide* Giddings, *Principles of Sociology*, ed. 1905, p. 20; Carver, *Essays in Social Justice*, *passim*. I think that the range of choices compatible with survival is very wide. Moreover, "adaptation" is not a simple matter of adjustment to the physiographic environment. It includes adjustment to the *social values*, both of the group in question and of other groups.

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And very much of it has already been done. It is my purpose here, simply, to show that price theory, as developed on the basis of static notions, may be extended, and has in considerable measure been extended, to cover these problems, and that for the same reason that price theory is unable to give really fundamental answers to them, often, it is likewise unable to give fundamental answers to the value problem anywhere—that the phenomena of value are of the same stuff and substance as the phenomena treated by "dynamics" and "the theory of prosperity," and that static theory has been busied chiefly with a limited portion of the field only because the problems were easier there. Much has been made, especially in such a book as W. C. Mitchell's *Business Cycles*, of technological factors, and of factors in the psychology of the business man and of the laborer in the ups and downs of business, and particularly of certain elements of scarcity or overabundance of productive resources at critical parts of the economic system, which raise values and prices unduly at certain points, compelling radical readjustments of values and prices elsewhere. Virtually all of these considerations will fit into the scheme here outlined. They work *through* modifications of the system of values and prices. H. L. Moore's recent *Economic Cycles* lays heavy emphasis on physiographic factors, particularly variations in rainfall. But these, too, act on the economic situation through affecting the quantities of objects of value, and so through modification of the marginal values of goods. The psychological theory of economic value by no means excludes any amount of influence one can find in physiographic or technological factors.

One of the most important factors in the minds of many writers who would treat business cycles, and a factor to which virtually all writers give attention, is the waxing

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and waning of business confidence, and of the volume of credit. I have given an extended analysis of the psychology of confidence, and of the psychological nature of credit, in my chapters on that topic. It is enough to say here that we have in credit phenomena things which are of the very stuff of economic values in general. Beliefs and hopes are factors in economic values, and values wax and wane with them. There is little indeed in the psychological and institutional aspects of the theory of prosperity which an adequate theory of value would not contain.

The theory of *prices*, as an abstract formula of description, is of primary interest to the scientist, who has nothing to do with the manipulation of concrete values, and who has no interests at stake in the behavior of particular values at a particular time. His purposes are ultimately practical, no doubt, but the practical ends he has in view are, after all, only to lay down general rules of public policy, of a high degree of generality, and he consequently may abstract from a great deal of the concrete causal process. The theory of *value*, in its concrete fulness, is the special interest of the active business man, and especially of the business man who wishes, not merely to *adapt himself* to changes in values, but also in part, to *control* and *manipulate* those values. *He* must study every factor which does, in fact, bring about changes in the value system. We do not find the market-letter of a brokerage house, or the calculations of a captain of industry, or trust promoter, troubling themselves about marginal utilities or labor-pains! Notions of supply and demand, and the relations of the prevailing interest rate to the capital values of securities, they do employ. Notions of money-costs of production they make use of. But they also give very close attention to questions of governmental policy, to court decisions, to movements in the field of labor organization, to money-

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market phenomena, and particularly to gold movements and the state of the exchanges, to political campaigns, to the strength of the prohibition movement, to changing fashions and modes, and, above all, to the general *tone*, the *consensus*, so far as it is ascertainable, as to whether business is good or bad, whether men are buoyant or depressed, to the ups and downs of business confidence. They pay marked attention to the opinions expressed by certain men, great bankers or industrial leaders, not merely because they think these men good judges, but also, and in part primarily, because these men are centres of power, "radiant points of social control," whose opinions make the opinions of others, and whose statements that times are good tend to make them good, and that times are bad tend to make them bad. For static theory, nothing is more contemptible than the view which "demagogues" often express in Congress that great men in Wall Street make and unmake prosperity, bring about and check panics. For static theory, the only way that big men can lower prices is by selling, and the only way they can raise prices is by buying.[1] Their power to raise and lower prices is thus limited by the amount of their wealth which they are willing to employ in this way. As it is not likely to be profitable to be a bull when the general condition of the "fundamentals" calls for falling prices, and as bear operations, contrary to the fundamentals, are likewise usually costly, the inference would be that the big men will not, even if they could, alter the course of the market. Their wealth is, after all, not so tremendous, as compared with the aggregate wealth of the rest of the community. But the market takes the big men more seriously! When they are selling heavily, other men are often *afraid* to buy, such is their

[1] *Cf.* H. C. Emery's discussion of "manipulation" in his *Speculation in the Stock and Produce Exchanges*, pp. 171ff.

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prestige. When they give out opinions, these opinions *become* the opinions of a host of others, almost automatically. When Morgan stepped into the breach in the Panic of 1907 with $25,000,000, it was quite as much the fact that *Morgan* had acted, as it was the millions themselves, which relieved the situation. Indeed, it was in no small degree the prestige of Morgan which relieved the *disorganization*, which restored the discipline, and made it possible for the elements in the market to work in harmony and coöperation again. Society is a functional unity, and the "tone of business," the ups and downs of prosperity, depend in large measure indeed on the degree to which the lines of communication between the different parts are kept open, on the question of whether each part does its expected task at the right time and in the right way, on the all-together-functioning, the *integration*, of the elements. These are phases of the matter from which static theory abstracts. They are organic problems, not mechanistic problems. Of course, mechanisms get out of order too. But tightening a bolt is a very different thing from restoring confidence and discipline to a market!

Those who wish to control values have their own technology. There is a technology of industry, a mechanical technology, running in terms of pistons and levers and soil-fertility-equivalents, and butter-fat-content, and ton-miles, which is governed *by* the values. But there is also a technology of *controlling* values which involves advertising, making sentiment, keeping up social discipline, effecting the equilibration of values by exchange, keeping "interstitial" adjustments smooth, which involves a different kind of activity, thought, and ability, and which employs different instrumentalities. Its problems are problems of human nature and social relationships, its laws are psychological laws, particularly the laws of suggestion,

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imitation, and the like, its tools are the newspaper, the sign-board, the whispered word, the cigar and the dinner with wine, sound logic, money and credit instruments, the prestiges of men and institutions. For men whose work lies in controlling and making values, rather than in making passive technical adjustments to existing values, the theory of value, as I have defined it, is of supreme importance.

This, I may say for the critic who may consider the social value theory a highly speculative and theoretical notion, does not mean that the active business man or the advertising writer, has formulated the social value theory in terms of a social mind, conceived of, in the light of modern functional psychology, as a functional unity of individual minds! The advertising writer is a student of modern psychology, and reads books on the psychology of advertising, which discuss the psychology of suggestion, and the like. But long before such books were written for him, he studied the phenomena involved in his own way. It is not his business to construct a theoretical economics! It is his business to make a market for his wares. He is interested in the scientific theories of modern social psychology only in so far as they help him in that task. He has no occasion to construct a vast conspectus, which shall summarize the whole economic situation, in its social setting. But my point is, simply, that the kind of phenomena which he does study are indicated and stressed and brought into a system in the theory of social value which I have tried to elaborate. As his purposes are different from those of the economist, his method of approach, and his range of investigation, will necessarily be different.

The notion of dynamics has been in a way connected with the idea of evolution, of historical process in time, while the notion of statics has been essentially connected with the notion of a cross-section, a stage, an equilibrium

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of contemporary forces. How, then, bring the two together? Of course, we may conceive the evolutionary process itself as a series of stages, and the mind does tend almost inevitably to do that. The fact is, of course, a perpetual flow, with unceasing change. The mind grasps such a notion with difficulty, if at all. Logic is mechanical and mathematical, and mathematics and mechanics are static.[1] But further, we may in large measure bring the historical considerations into a cross-section picture, when it is a value system that is involved. *Past* facts exert their influence through *present* values; and *future* facts, which may be expected to modify future values, come into the present equilibrium as discounted *present* worths.

When we view the situation realistically, moreover,—which means, when we view it as a living organic, psychological process,—our cross-section does not need to be narrowed to a moment of time. We may see the values not yet in stable equilibrium, but in process of equilibration, with marginal values and prices fluctuating, tending toward a static goal, but hindered by various cross-currents, of "friction," of uncertainty, of momentary values which rest on beliefs regarding the process of transition itself—as when a "bull" on the war-stocks turns bear temporarily, because he thinks that prices may fall before recovering themselves, and going higher. We may see obstacles in the way of readjustment whose importance is itself subject to static measure—labor temporarily out of work, and labor-time lost, at so much per day; uncertainties which give rise to speculation, which calls for the employment of extra banking credit, at such and such per cent; capital-instruments which have to be "scrapped," representing the loss of so many dollars. We may see the process of building

[1] *Cf.* Dewey, *Essays in Logical Theory;* Bergson, *Time and Free Will, passim,* and *Creative Evolution;* James, *Problems of Philosophy.*

up new trade connections, at such and such a cost, to replace others which formerly functioned, but which no longer serve, which were once worth so much, and which now are valueless. Watching the realistic process of transition, through a period of time, we may still apply our static yardstick to many of its features.

Above all, do we get in this connection a realization of the fact that the "immaterial capital" of which Veblen speaks is true social wealth.[1] Whatever is necessary for the carrying on of economic life, whatever, if destroyed, must be replaced, before the economic process can go on, and will be replaced by the expenditure of labor and thought and money, is capital. The sales-force is as truly a part of the labor-force of a corporation as are the mechanics. The trade connections which the sales-force has built up is as truly a part of the capital of the business as the machines which the mechanics have made. The static theory which abstracts from this easily leads to dangerous conclusions. Removing a tariff may well, *after the transition is completed*, give a greater productive efficiency to a country. But what of the cost of transition? May not the values destroyed, and to be recreated, in the form of trade connections, social organization, accomplished adjustments, and the like, be greater than the new values to be gained by better adaptation of industry to the physical resources or the capacities of the labor supply, of the country? In large measure, this question, in a given case, is susceptible to a quantitative answer. The statesman who reckons only the gains which the final static adjustment will bring, and neglects the costs of reaching it, costs not alone in

[1] *Cf.* Bagehot's discussion in *Lombard Street* of the features of English organization which prevented supremacy in the Eastern trade from passing to Greece and Italy with the opening of the Suez Canal. (Introductory chapter.) See also the discussion of the English money market in ch. XXIV, *supra*.

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"scrapped" machines, but also in "scrapped" social organization, has missed a substantial part of his problem.

The theory of prosperity, and the theory of value, are largely concerned with just this system of social control, by means of which value scales are altered, and by means of which altered values are brought into a new equilibrium. It is a complicated fabric of psychological relationships, partly institutionalized, partly non-institutional. The institutions—as banks, big corporations, speculative exchanges, and the like, are the nuclei, about which centre much that is temporary, shifting, and flexible. Given time, the whole system is highly flexible—it is organic, and not mechanical.

The serious injury of this system in a country may well be a greater disaster than the destruction of physical items. Let unscrupulous men—or misguided men—bring about a legal repudiation of debts, and the disaster may be greater than the destruction of a city by an earthquake. That creditors have been robbed is a minor matter, but that credit has been shaken, so that men will fear to lend again or to sell except for cash, may well mean industrial paralysis.

Considerations like these enable us, in substantial degree, to reduce "transitional" considerations to common terms with "normal" considerations. We can apply the static measure to the "transitional considerations," and we find the values which come into equilibrium in the "normal" period to be generically like those whose variations interest us in the period of transition. Indeed, the "normal equilibrium," if it were ever reached, would also contain these intangible capital items, though many of them would be much reduced, since the work that they have to do would be largely gone, if the normal equilibrium were persistent.

It does not follow from the foregoing that many of the

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elements in "modern business capital" are not, as Veblen's analysis suggests, sinister and anti-social. To say that their values are true social economic values, generically the same as the values of wheat or corn or whiskey or opium or Sanatogen or milk or tickets to burlesque shows, or silver sacramental sets, or Ford automobiles, is not necessarily to give them a good moral character! Some of these intangible capital goods are thoroughly anti-social, and should be destroyed. This is particularly true of monopoly power, and of popular brands whose value rests in popular delusion. But even here, caution is needed. Is it socially wise to destroy a wine cellar, containing an hundred thousand dollars worth of fine wines, even assuming that Demon Rum is as black as he is painted, and that Veuve Cliquot is his favorite daughter? Will not the economic values which have been destroyed in this moral fervor be recreated? And will not this tend to divert labor and capital from the creation of a corresponding amount of more wholesome economic goods? Might it not be wiser from the standpoint of the temperance movement itself, to sell the wine cellar—at private sale, of course!—and use the proceeds in the campaign fund of the prohibition party? Of course, there is more still to the story. The destruction of the wine cellar may be done so dramatically, and may be so well advertised, that it will arrest public attention, and tend to create new social values, of a moral and legal sort, which will prevent the recreating of that wine, by changing the direction of demand, and by lessening the sources of supply. Similarly with trade connections, and other intangible capital items. If destroying one means merely that labor and capital will be employed in making others no better, the social gain is very doubtful. And some sort of system of control of interstitial adjustment, of overcoming friction, etc., there must be.

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I wish to contrast the view I have been here presenting with that developed by Schumpeter, in his *Theorie der Wirtschaftlichen Entwicklung*. In Schumpeter's view, the division between statics and dynamics is much more than methodological: The phenomena of statics and dynamics are different phenomena. Statics is concerned with the influence of individual utility-scales, or utility-scales and psychic cost-scales, hedonistic phenomena. Dynamics is concerned with the influence of "*energisch*," (as distinguished from "*hedonisch*") factors. (*Loc. cit.*, 128.) Most men are moved by hedonic considerations. Their economic activity tends toward the equilibrium described in static theory. Seeking to maximize satisfactions, and to minimize pains, they tend to get into the "best-possible" situation ("best-possible" under the "given conditions") and stay there. The "energetic" type of men, moved by motives like love of activity for its own sake, love of creative activity, love of distinction, love of victory over others, love of the game, etc., undertake activities which tend to alter the "given conditions" themselves, to alter the structure and technique of economic society, to introduce new ways of doing things, and so to break the static equilibrium. This last type of men is small in number, but tremendously important. Schumpeter's theory of value rests solely in an analysis of the hedonic factors mentioned, conceived of as individual psychological magnitudes. I have discussed his theory of value in the chapter on "Marginal Utility" in this book, and would refer to that discussion here. He makes virtually no use of the value concept there developed in explaining the causation of dynamic change, but instead, as I have pointed out in that chapter, invents new concepts, which do the work of the value concept, which he calls "*Kaufkraft*," "*Kapital*," and "*Kredit*," which do not rest on marginal utility, but rather

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on the activities of certain centres of economic power, particularly of banks.[1] His picture of economic evolution is that of a conflict between these static and dynamic forces, between "utility-curves" and the psychological factors of the "energetic" type, the former represented in a set of static price-ratios, the latter in a set of dynamic "powers," conceived of, not as sums of money (even though expressed in money-terms), but as "abstract power," which grows, not merely out of the individual psychologies of the entrepreneurs, but also, and primarily, out of the social influence centered in the banker. This power which the banker to-day supplies was in earlier periods supplied by the political power of the despot, and is distinctly a matter of social organization, and social control, an over-individual, social phenomenon, analogous to the "social value" which I have sought to put behind all prices, whether "static" or "dynamic." The dynamic man needs "power," either political or financial, to "force" the "static" men out of their accustomed ways of activity. They fear and resist him. He must coerce them. The contrast is thus sharply made between abstract price-ratios, resting on individual feeling-scales, and quantitative "powers," measured in money, resting on a social basis. Between the factors underlying static prices, and those underlying dynamic prices there is, thus, nothing in common. Statics and dynamics are concerned with fundamentally different phenomena.[2]

[1] *Cf.* my article on "Schumpeter's Dynamic Economics" in *Political Science Quarterly*, Dec. 1915, and ch. XXIII, *supra*.

[2] In my article on Schumpeter's theory above mentioned, I have pointed out that his contrast between statics and dynamics is not by any means a fixed one, and that in particular he shifts back and forth between a hypothetical static state, primarily a methodological device, which assumes perfect fluidity and mobility of the objects of exchange, on the one hand, and a realistic static state, immobile, held in the bonds of custom and tradition, illustrated by India and China, on the other hand. The version of the

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If my criticisms of the utility theory of value are sound, and if what has gone before in this chapter holds good, we must restate Schumpeter's contrast.[1] The static tendencies do not rest on any peculiarities of the psychological "stuff" from which static values are derived. They rest rather in the universal tendencies of all values, whatever the psychological factors behind them, to come to an equilibrium. The reason that values, whether they be the values of new and novel things, or the values of old and familiar things, tend to come to an equilibrium is that gains come from equilibrating them. When some values are too low, and some are too high, the opportunities for speculative gain are evident. Arbitraging transactions, as between different places, time-speculation, transferring labor and capital from one enterprise to another, increasing the supplies of some goods and reducing the supplies of other, changing land from wheat to corn, etc., etc.,—all these things are sources of gain, and they will be done, whatever the origin of the values involved. The new, dynamic enterprise, before it becomes actualized in concrete machinery, factory building, etc., and long before its income is actualized in money-receipts from the goods it is destined to produce, becomes an *object of value*. The value is a *future* value. But it comes into the present as a discounted present worth. As such it functions like any other value, tending to attract in its own direction the land, labor and

distinction between statics and dynamics here discussed is only one of several which he gives. It is, however, the one which at present I wish to contrast with my own view. With many of Schumpeter's doctrines I am in hearty accord, and I have learned much from his book. I think that his book affords abundant evidence of the usefulness of the static-dynamic contrast.

[1] Schumpeter's contrast between statics and dynamics is in most essentials closely parallel to Veblen's contrast between the theory of wealth and the theory of prosperity, and his main conclusions resemble Veblen's, despite Schumpeter's optimism and Veblen's pessimism, and despite temperamental and methodological differences. Most of my criticisms of Veblen apply also to Schumpeter.

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capital necessary for its realization. It does not differ in its functioning from the present worths of future goods of familiar sorts.[1] It tends, after a process of reëquilibration —which Schumpeter, with his theory of crises, has done much to elucidate—to come into equilibrium with the older, "static" values, becomes itself a static value. Indeed, from its inception, it comes under the static, money measure. It enters at once into the scheme of static values and prices, even though it causes readjustment there.

The preëxisting static values are themselves to be explained, not as growing out of individual feeling-scales, but as growing out of a complex social psychology, in which some men and groups of men have vastly greater social "power" than others. The preëxisting static values are of the same stuff as the dynamic values. But this has already been made clear.

The possibility of presenting an equilibrium picture of social forces, to the extent that those social forces submit themselves to the money measure, the possibility of applying the methods of static price-theory wherever pecuniary concepts may be carried, does not exhaust the possibilities of the static notion, at least as a schematic device. There are many social values, particularly in the legal and moral sphere, which do not readily come under the money measure, and where such measurements as may be made in money terms seem obviously inadequate. Of these values, as of all values, however, the law of equilibration holds. *All* tend to come into adjustment of a sort that will allow the maximum of values to be realized. Something of the exactness of the static method has recently appeared in a decision by a famous jurist, confronted with the fact of the conflict of two legal principles. Most judges would go

[1] *Cf.* our discussion, *supra*, of the relation of credit to futurity.

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on the legal theory that there can be no conflict in the laws of a single sovereign. Of course, we have courses in "Conflicts of Laws" in our law schools, but the subjects treated in such courses relate to conflicts, say, between the laws of New York and the laws of New Jersey. When a judge is presented with a case of conflict between two laws of New York, he will commonly feel it to be his duty to "remove" the conflict, by making distinctions, till the conflict is whittled away. Not a little bad law has thus originated! The law is "absolute." It knows no exceptions. It does not obey the law of diminishing significance. Of course, "*de minimis non curat lex*," but that means, not that there is a delicate margin, where the law ceases to apply, but merely that the law disregards trifles too insignificant to attract its attention at all. They are, in mathematical phrase, "infinitesimals of the second order," discontinuous with the interests of magnitude great enough to attract the attention of the law. There is little room in such a legal theory for notions of the sort discussed in this chapter to find place! But a different theory of the law is implied, and partly expressed, in a recent decision by Mr. Justice Holmes: "All rights tend to declare themselves absolute to their logical extreme. Yet all in fact are limited by the neighborhood of principles of policy which are other than those on which the particular right is founded, and which become strong enough to hold their own when a certain point is reached. The limits set to property by other public interests present themselves as a branch of what is called the police power of the State. The boundary at which the conflicting interests balance cannot be determined by any general formula in advance, but points along the line, or helping to establish it, are fixed by decisions that this or that concrete case falls on the nearer or farther side. . . . It constantly is necessary to reconcile and adjust

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different constitutional principles, each of which would be entitled to possession of the disputed ground but for the presence of the others." (Hudson County Water Co. *vs.* McCarter, 209 U. S., 349, 1908.) Here we have a scheme very like that of static economic theory! "The boundary at which the conflicting interests balance"—the *margin* where the curves of diminishing value of the two legal principles intersect! A plurality of legal values, in marginal equilibrium! Lacking a tool of thought so convenient as money has proved for the economist, the jurist finds trouble in making his margins precise. He is dealing with quantities for which he has found no common measure. There is no "standard or common measure" of legal values. Hence, most lawyers content themselves with qualitative reasoning, seeking to avoid the necessity of quantitative weighing and comparison of the factors in their problem by making distinctions of *kind*. Mr. Justice Holmes recognizes the necessity and the existence of legal *quantities*, and of making quantitative distinctions, *i. e.*, distinctions of *degree*. He sees a generic essence common to the whole body of laws, such that marginal equilibria are possible and actual.

So far we have a static system of laws. But the same writer, in a later decision, has said: "And yet again the extent to which legislation may modify and restrict the uses of property consistently with the constitution is not a question for pure abstract theory alone. Tradition and the habits of a community count for more than logic." (Laurel Hill Cemetery *vs.* San Francisco, 216 U. S. 358, 1910.) As these traditions and habits of a community may change, so may the legal values change, and new equilibria need to be reached in a process of readjustment.

But further, in this view, and in the view of the best students of jurisprudence in general, the legal values are not

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an insulated, self-contained system. In the sentence last quoted, Justice Holmes sees their root in a total social situation. And it is easy to show that economic values, in particular, are part of that social situation out of which legal values derive their power. Legal values enter into economic values. Economic values enter into legal values. And between legal values and economic values are marginal equilibria. There is a vast social system of values, legal, economic, moral, religious, etc., in constant dynamic change, but tending also to static equilibrium. Changes at any part of the system compel readjustments throughout. The process of equilibration is often slow, but slow or rapid, smooth or violent, it is in constant process. For the further elaboration of notions like these, I refer again to my *Social Value*. Here, as in the narrower economic sphere, we have men and institutions whose chief activity is concerned with the manipulation and control of these values, with effecting the readjustments, and bringing about the reëquilibrations. They have their appropriate tools and technology. Money and credit are merely part of a much wider system concerned with social control and social adjustment!

To summarize: The problem of this chapter has been to harmonize statics and dynamics, the "theory of wealth" and the "theory of prosperity," "normal" and "transitional," and similar notions, commonly held to belong to different spheres, and to be incapable of reduction to common terms. A number of such contrasts have been passed in review, and numerous illustrations of the various types of contrast have been given. It is the contention of the present chapter that the most fundamental of these contrasts, and the one which gathers up the meaning of most of them, is that between the theory of value, and the theory

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of price. The theory of value is dynamic, is concerned with the phenomena of prosperity and depression, is realistic enough to deal with transitions and readjustments; the theory of price is static, and rests in the notion of accomplished equilibrium, abstracting from the problems of friction and transition. The reconciliation comes from two angles: on the one hand we have generalized price theory, showing that in large measure the phenomena with which value theory, theory of prosperity, dynamics, deal come under the money measure, are made "static" by "discounting," and by the application of accounting principles; that this tends to be more and more true as knowledge grows more accurate; that "statics" means especially quantitative, as opposed to merely qualitative, thinking. We have shown further that the static schema is applicable even where the money measure is inapplicable, and even beyond the economic sphere, as illustrated by a recent decision of Justice Holmes. The other angle of approach was to universalize value theory, dynamics, theory of prosperity, by showing that all prices, whether "static" or "dynamic" have the same fundamental sort of explanation, that value is always a matter of social psychology, and never a matter of mere individual psychical magnitudes, or of "material fact." This is not to deny that physical facts have their bearing in the scheme: (a) they are among the objects of value, even though not the only objects, and (b) material facts, technological, physiographic, and biological, are the basis on which human nature rests, out of which it has developed, even though human culture including social values has increasingly emancipated itself from immediate dependence on them, and has acquired a partially independent movement of its own. The effort was not made to reduce mind and matter to common terms, but the case was rested in an irreducible

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dualism, and the causal influence of non-mental factors on the value-scales themselves cannot be measured by the static scheme. The static scheme, assuming the value-scales, gives a precise answer as to the influence of the quantities of physical objects on the marginal values. The significant fact about the values with which dynamics, theory of prosperity, etc., deal is that they are the values of immaterial social relationships and institutions, in large part, which are concerned with the problems of social adjustment and control, with affecting equilibria in the economic sphere, with overcoming the friction and effecting the transitions from which static theory abstracts. This is a phase of production quite as important as the physical activities of laborers or machines. It has its own technology, appropriate to its problems. In particular, money and credit are part of its tools. Since its problems are to control men's minds, it uses psychological forces. Where the mechanic uses a storage battery, charged with electricity, to move material things, the technologist of economic readjustment employs a dollar, charged with social value, which is power over the action of men. It is as a bearer of value, in form adapted to the problem, that is in highly saleable form, that the dollar functions. It is the psychological significance of the dollar, and not its physical qualities *per se*, that enables it to do its work. The physical weight in gold, which itself is an object of social value, is commonly the immediate basis of the value of the dollar to-day, but money may get its primary value from other sources than valuable bullion. Given this primary value, the dollar may get an enhancement in that value from the services which it performs in the social technology of adjustment.

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